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ENVIRONMENT 2001

Strategic Directions for British Columbia

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MESSAGE FROM THE MINISTER OF ENVIRONMENT

"Such was the depth of the precipices below, and the height of the mountains above, with the rude and wild magnificence of the scenery around, that I shall not attempt to describe such an astonishing and awful combination of objects; of which, indeed, no description can convey an adequate idea."

— Alexander Mackenzie — on Burnt Bridge Creek, a tributary of the Bella Coola River — July 26, 1793

To Alexander Mackenzie, almost two centuries ago, British Columbia's rich resources must have seemed both impressive and boundless. But today our province is entering an important time of transition. We face major environmental and economic challenges. We must take steps to manage the transition to a sustainable future, in which the environmental bounty of our land, and the strength and stability of our economy are mutually supportive. We need to ensure that British Columbia remains the same plentiful, stunning land that inspired Alexander Mackenzie with awe.

As British Columbians, we are now much more aware of environmental concerns than ever before and, in my experience, there is no lack of people willing to point out the problems. We must recognize that no single individual, group, industry or government ministry has caused all the difficulties. Defining and understanding the problems, and then developing the solutions, will require sensitivity to different views and concerns. It will require the cooperation and collaboration of a broad cross-section of our society. We must do it right. We must work together.

Many future issues have yet to be fully identified. New technologies to deal with some of the present concerns are just now being developed or are still untried concepts. The transition will bring with it costs, both social and financial. We must consider creative new financing mechanisms and programs to minimize disruption to our communities and economy.

We must set our sights high. We cannot be content to accept current limitations. Our goals should be zero pollution and full environmental protection. Our ability to reach those goals will be the test of our collective ingenuity and commitment, and our willingness to work together.

David Mercier, Minister of Environment
August, 1991

Your Comments Are Important

"... go into the woods alone and look at the earth crowded with growth, new and old bursting from their strong roots hidden in the silent, live ground, each seed according to its own kind expanding, bursting, pushing its way upward towards the light and air, each knowing what to do, each one demanding its own rights on earth."

— Emily Carr

Environment 2001 identifies the environmental challenges facing our province and outlines B.C. Environment's commitment to address them. It is meant to help the ministry and all British Columbians understand the complex, interrelated nature of many issues, as we strive to protect and restore our environment while ensuring a sustainable economy.

The commitments, approaches and strategies outlined in this document are only meaningful if they are vigorously pursued and put into effect. Most of all, they need the support and involvement of British Columbians everywhere.

We at B.C. Environment are interested in your views on the issues and initiatives in *Environment 2001* and its companion documents.

You can express your ideas on the future of this rich and beautiful province in these ways:

- Write, fax or phone B.C. Environment:

  Public Affairs and Communications Branch
  First Floor, 810 Blanshard Street
  Victoria, British Columbia
  V8V 1X5
  Phone: 387-9422 **Fax: 387-5703**

- Respond to one of the more specific companion documents in areas of your particular interest.

- Take part in one of the many follow-up consultations on specific areas.

EXECUTIVE SUMMARY

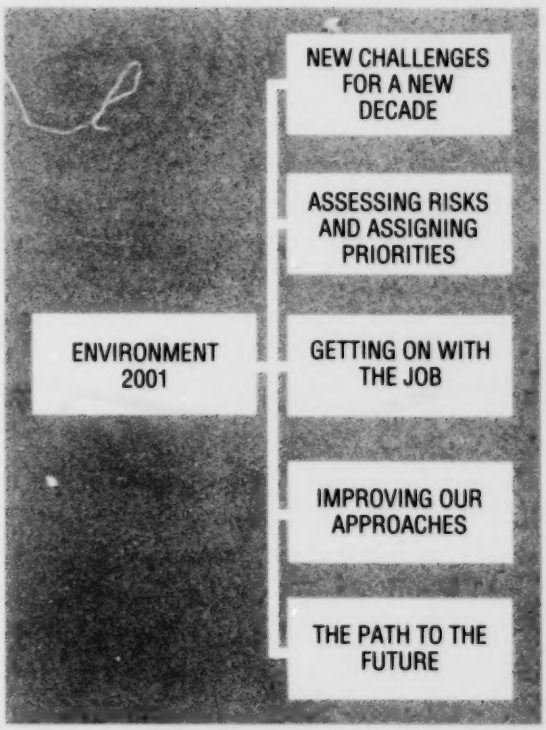
"The dramatic discovery of the century is that the earth, far from being massive, imponderable, and inexhaustible, is small and finite. Man must make himself small and humble to live within it rather than a ruthless giant to conquer it."

— Roderick Haig Brown

Introduction

Commitment to Environmental Protection — The word "commitment" has a number of meanings. It can signify the solemn assumption of a charge, trust or responsibility. It can refer to an agreement or pledge to do something in the future. It can convey a sense of passion for and engagement in a cause. Environment 2001 encompasses all those meanings, in expressing the commitment of B.C. Environment.

Environment 2001 is a commitment to positive, effective action on the urgent environmental issues confronting us today. It is a commitment to carefully plan for the new and difficult challenges of tomorrow. It is a commitment to shared responsibility and partnerships in reaching the goals of environmental protection and sustainable development. It is a commitment to consultation and discussion in the mutual search for answers. It is a commitment to finding new approaches, technologies and solutions. Finally, it is the ministry's commitment to strong representation and advocacy for environmental protection and enhancement — in the councils of government, and with industry, interest groups and individuals.


NEW CHALLENGES FOR A NEW DECADE
ASSESSING RISKS AND ASSIGNING PRIORITIES
ENVIRONMENT 2001
GETTING ON WITH THE JOB
IMPROVING OUR APPROACHES
THE PATH TO THE FUTURE

The discussion and commitments in *Environment 2001* will also contribute to the work of the British Columbia Round Table on the Environment and the Economy. The Round Table is made up of British Columbians from all walks of life, and with strikingly different perspectives on the environmental, economic and social issues of today. By consulting

with individuals and groups throughout B.C., the Round Table is developing a comprehensive strategy on sustainable development, for recommendation to the provincial government.

New Challenges for a New Decade outlines the ministry's commitment to environmental protection. It describes the guiding principles applied by the ministry in developing specific programs and strategies, and emphasizes the importance of integrating and balancing economic and environmental concerns.

Transition — A central theme of the document is transition. For the environment, the 1990s is a transitional decade. Understanding and then dealing with the environmental challenges before us all involves significant changes. The transition to sustainable development requires changes in attitudes, values and the way in which environmental impacts are taken into account. New approaches and concepts of environmental management are modifying and, at times, supplanting those currently in place.

We have also moved from a time of relative certainty to one of relative uncertainty. In the seventies we were certain we knew the answers. In the 1990s, we are more certain about the questions than the solutions. There has also been an important change in our sense of urgency: from a relatively leisurely pace to one quickened by the understanding that the time left to make the necessary changes is finite and narrowing.

Global View — A second theme is the broadening of environmental issues. So many of the issues now before us, from ozone depletion to acid rain, are making national borders irrelevant. The global significance of many ecological issues requires concerted national and international cooperation. British Columbia must do its part and play a strong role in enabling Canada to meet its environmental obligations — by correcting past mistakes and preventing future damage.

Guiding Principles — This chapter also sets out principles to guide and inform B.C. Environment as it develops its programs and policies. The fundamental needs of people — such as food, good health, shelter, clothing and jobs — must be met, both now and in the future. But we cannot continue to pursue those ends at the expense of the environment, which is the very basis of life itself. The path to long-term economic and social prosperity is development that stays within the limits required to

maintain environmental integrity. Our economic activities must increase resource productivity without damaging or using up our natural assets.

Carefully and sensitively managing the transition to sustainable development is essential. As we balance our planning and decisions to properly reflect environmental priorities, we must recognize that the shift to sustainable development will affect the province's economy and many of its communities.

All the changes will not take place overnight, but when they do occur there will be some disruption and dislocation. B.C. Environment is committed to carefully managing the transition and to maintaining a stable economy. New environmental policies, laws and programs must cause minimal disruption to industries and communities. Extensive public consultation will also take place before any major action is taken.

Assessing Risks and Assigning Priorities reviews the risk assessment completed by the ministry and the need to apply our scientific understanding to the priorization of the tasks before us. It then indicates the priority areas which B.C. Environment will be pursuing.

Each day seems to greet us with news about yet another critical environmental issue. How do we decide which concerns are the most important and where to focus our commitment, time and funding? Those are hard questions. To begin to answer them and set our priorities for this decade, B.C. Environment has recently completed an initial assessment of the major environmental issues.

As a result of that assessment, the ministry has identified seven broad priorities for environmental protection and enhancement. Five of them deal with what the ministry does in "getting on with the job": ensuring clean land and air, and sustaining our water, fisheries and wildlife. The remaining two priorities relate to how we will go about doing our job — by "improving our approaches." Those key tasks are: building partnerships and developing new tools.

Getting on with the Job deals with specific priority areas identified by the ministry as of particular concern. This is where we move from organizing principles and a sound understanding of the scientific and economic factors to positive and

detailed action. The chapter is organized around the central themes of *Ensuring Clean Land, Sustaining Water, Fisheries and Wildlife* and *Ensuring Clean Air.*

Ensuring Clean Land deals with the problems and challenges of waste management. Every society must manage its waste so that the good health of our natural world and all its inhabitants is not harmed. *Environment 2001* makes a commitment to developing detailed management strategies for all the kinds of waste in B.C., as well as contaminated sites, toxic chemicals, and pesticides. The initiatives and commitments include a long-term goal of zero pollution from all sources. To this end, we are implementing programs to reduce municipal solid waste and hazardous waste by at least 50 percent, and pesticide use by 25 percent, by the year 2000. We are also helping municipalities to provide secondary sewage treatment or to complete approved liquid waste management plans by the year 1995.

Sustaining Water, Fisheries and Wildlife outlines the ministry's strategies and initiatives for managing those valuable resources. Preserving and protecting our water, fisheries and wildlife will be a priority for B.C. Environment, resulting in important changes in programs and legislation. Comprehensive reviews of those issues are announced, which will be detailed in follow-up documents. A number of key actions and policies are discussed. But the main strategy for the future is integrated resource management — a process whereby all environmental concerns and resource values are recognized and addressed before any development decisions are made.

Ensuring Clean Air groups together the various programs and initiatives related to maintaining and safeguarding our atmosphere. The threats to global atmospheric purity are some of the most serious environmental problems confronting the world today. B.C. Environment will therefore create programs to improve air quality, reduce acid rain, develop B.C.'s role in a national strategy on global warming, and control substances that deplete the ozone layer.

The development of a clean air strategy for British Columbia is discussed and related to a number of more specific programs and commitments. The initiatives include reducing motor vehicle emissions, promoting less polluting fuels, and implementing a smoke management strategy. A comprehensive policy on global warming and greenhouse gases is a top priority. With respect to stratospheric ozone depletion, the ministry will introduce regulations to limit the use of CFCs and halons in the province. It will also work towards requiring the recovery, recycling and eventual destruction of such chemicals.

Improving Our Approaches lays out our commitment to promoting cooperation and teamwork, developing new and useful tools to tackle our environmental problems, and designing effective emergency response. Knowing what to do is important; so is knowing how to do it. This chapter centres on strengthening partnerships, as well as improving legislation, enforcement, and environmental impact assessment procedures. It also stresses the importance of using economic incentives and up-to-date science and technology in our efforts to conserve the environment.

Building Partnerships will be essential to environmental protection and restoration in this decade and beyond. Resolving complex environmental problems requires cooperation and concerted action at many levels. We have neither the time — nor should we have the patience — for jurisdictional squabbling between governments, or turf wars between interest groups.

B.C. Environment has targeted six sectors with which the province should build closer partnerships: individual citizens, young British Columbians, Native communities, local governments, the federal government, and neighbouring jurisdictions in Canada and the United States. Examples of future action are the regular release of a Report on the State of the Environment and addressing the changing role of Native communities in managing local fish-and-wildlife resources. Another priority is negotiating environmental protection accords with Ottawa, and neighbouring provinces, territories and states.

Developing New Tools emphasizes the importance of trying fresh approaches and innovative technologies in the face of new challenges. For government, modern, comprehensive environmental laws are essential tools in bringing about sustainable development. This section describes B.C. Environment's commitment to review and revise our key environmental legislation. The target is to develop legislation which covers all major aspects of environmental protection.

B.C. Environment will review all our laws dealing with wildlife and freshwater fisheries, especially as they relate to the protection of sensitive habitats and endangered species. As part of the overall review of environmental legislation, the ministry will consider measures to strengthen enforcement provisions.

Environmental impact assessment (EIA) is a valuable tool for assuring wise environmental stewardship. To improve the EIA system in our province, B.C. Environment will review the legislation and procedures on environmental impact assessment. We

will also take the lead in negotiating EIA agreements with neighbouring jurisdictions and the federal government.

To protect and enhance our natural world, B.C. Environment will increase its use of economic incentives and make use of advances in scientific understanding and technology. Expanding the province's emergency preparedness — for such disasters as floods, and spills of oil and toxic chemicals — is another clear direction for the future.

The Path to the Future reiterates the ministry's commitments to new programs, new policies and new approaches. It stresses the vital need for teamwork on the part of all British Columbians. Consultation and review are equally essential to complete and update the approaches suggested in this document. By encouraging such discussion and input, *Environment 2001* will become part of the transition, as we move to achieve sustainable development. Many of the challenges of the future are still unknown. But cooperation, careful planning and concerted action will ensure that we can look to the future with confidence.

New factors and conditions will arise. Emphases and approaches will change. New challenges will arise. For those reasons, the follow-up consultations and discussion documents will be very valuable. A number of the discussion papers, which will take more in-depth looks at addressing specific environmental issues, are being released simultaneously with *Environment 2001*. More will follow later. In this closing chapter, their content and their relationship to the overall strategy are explained.

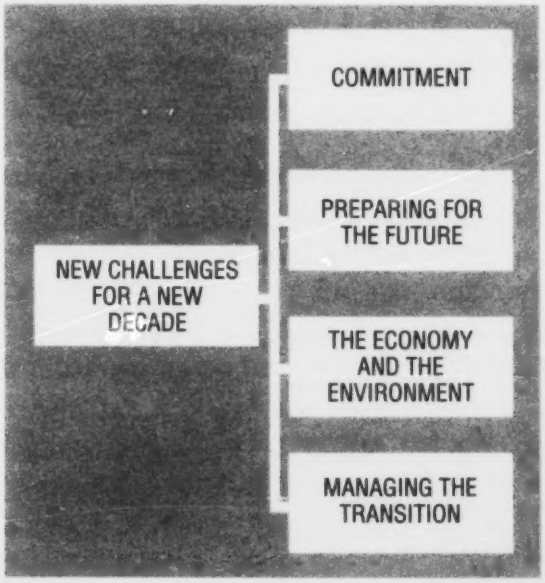
1
NEW CHALLENGES FOR A NEW DECADE

"Those responsible for managing natural resources and protecting the environment are institutionally separated from those responsible for managing the economy. The real world of interlocked economic and ecological systems will not change; the policies and institutions must."

— World Commission on Environment and Development, 1987

A. Commitment

Environment 2001 is about commitment. It is a commitment from B.C. Environment to develop a long-term strategy to deal with urgent environmental concerns. It is a commitment to a process of consultation, review and joint effort with other ministries, the public and the key stakeholders in British Columbia. It is, moreover, a commitment to action.



Although *Environment 2001* is for all British Columbians, it focuses primarily on the initiatives and programs of B.C. Environment. It recognizes, however, that protecting the environment is no longer the responsibility of one small ministry, but of all government ministries and agencies. That responsibility is, moreover, shared by the public and every sector of our society.

This document does not pretend to be definitive or all-inclusive. Our thinking and approaches to environmental protection must continue to evolve. Many of the initiatives and programs described in *Environment 2001* are at different stages of development. In some cases, the details of their implementation are now being discussed with our stakeholders.

In *Environment 2001* we have made every attempt to ensure that the ministry's commitments are precise, the particular actions and proposals are clear and measurable and, where appropriate, that dates and timeframes are included. The plan also reflects that many of the crucial shifts in attitudes and programs have already begun. We can now build on a solid, expanding base of programs and policies that have already been established to preserve ecological integrity.

B. Preparing for the Future

> *"We're in charge of the planet, and we're responsible for it .... It's a question of growing up and becoming more responsible adults as a civilization, of treating our possessions, which include the environment of the whole world, so that they will be around for future generations."*
>
> — Robert Bateman

British Columbia is endowed with 95 million hectares of rich and diverse ecosystems. We take pride in B.C.'s scenic beauty and derive enormous economic, social and cultural benefit from its natural heritage. Increasingly, however, the impacts on the environment of this century's industrial, technological and population growth are becoming evident. They serve as stark reminders that the quality of British Columbia's environment must be protected.

The mission of B.C. Environment is to manage, protect and enhance the environment for the benefit of present and future generations. If we are to achieve that mission, we have a lot of work to do in this decade. *Environment 2001* outlines the principles that will guide B.C. Environment in pursuing our mission and addressing the environmental challenges ahead of us. It also describes the strategies which B.C. Environment has already implemented or is proposing to address those challenges.

In addition, *Environment 2001* will contribute to the important work of the British Columbia Round Table on the Environment and the Economy. The Round Table is a group of British Columbians from all walks of life and regions who hold many different views on environmental, social and economic issues in the province. By consulting individuals and organizations all over the province, the Round Table will create a strategy for sustainable development in B.C., for recommendation to the provincial government.

A new ethic and a new approach to coexisting with our natural world — both are essential to ensuring a healthy, sustainable environment and economy for British

Columbia. The principles described below provide the foundation for such change and will guide our actions during this decade:

Guiding Principles

- The fundamental needs of people, both now and in the future, must be met — including good health and nutrition, shelter, clothing, employment and community stability.

- Society must develop a respect for the natural environment and its living components, which must be recognized as having an inherent value of their own, and not simply to provide material benefits for humanity.

- The goals of environmental integrity, economic prosperity and social stability must take into account local, provincial, national and global concerns.

- Decisions on resource use and economic development must integrate the consideration of environmental impacts. Protection of the environment can never again be an afterthought — it must become an essential part of the decision-making process.

- Decisions on resource use must weigh the potential effects on the entire ecosystem, not the individual impacts on component parts.

- Over the long term, the focus must be on sustaining the unique biodiversity of this province.

- Our approach to economic development must be compatible with maintaining a sound environment. The emphasis should be on sustained economic prosperity that does not permanently reduce or damage our natural assets. As well, we should concentrate more on intensively managing the resources we have already exploited.

- The public has a right to get information on, and take part in, decision making that could affect environmental quality. The government should promote such education and involvement through an open administration and frequent public consultation.

Those guiding principles should be embraced by governments, industry, groups and individual citizens — in short, all sectors of our society. *Environment 2001* will show that in many areas we have begun to apply the principles. It will also show that much remains to be done if we are to preserve a rich environment, prosperous economy and stable society for our children and their descendants.

C. The Economy and the Environment

> *"... for there is in the commission's view, no ultimate conflict between economic development and the preservation and enhancement of a healthy environment and a sustainable resource base."*
>
> — Royal Commission on the Economic Union and Development Prospects for Canada (The Macdonald Commission), 1985

The economy of British Columbia is in transition. We are shifting our historic dependence on natural resource extraction to a more balanced economy. New approaches are required to meet the needs of a society aspiring towards a sustainable environment. In the past, environmental management has reacted to changes in the economy. In the future, the need to sustain our natural world must guide individual and collective action in a manner that ensures a proper balance of environmental and economic considerations.

Although our awareness of humanity's impact on the environment has dramatically risen in recent years, those impacts have been accumulating over a much longer period. Many of the ecological issues have attained global significance and will require concerted national and international cooperation. B.C. must play its role in enabling Canada to meet its obligations as a member of the world community. We must begin at home by correcting past mistakes and preventing future damage.

Environmental management cannot occur in isolation from other priorities of our society, however. Government policy on environmental management must reflect the goals and aspirations of the citizens of British Columbia. Shifting economic and social values will continue to strongly influence government's role in safeguarding the environment. It is important that we are sensitive to those changes and consider them when developing our programs.

Our concept of the environment and its interconnection with economic growth has evolved a great deal over the past several decades. During much of this century, economic development in British Columbia was based on the perception that there would always be new resources and opportunities. The rivers, forests, fish and

wildlife were abundant and used without enough concern for maintaining their quality and quantity.

Although British Columbia remains a small, open economy — heavily dependent on international trade of natural resources such as lumber and coal — many of the traditional sources of wealth and employment are undergoing fundamental change. Those changes are being driven by factors such as a globally oriented economy, free trade, technological innovation, shifts in consumer demand and our growing awareness of our individual responsibility for the environment. Some of the factors are internal to the province, while others are external. Some of them we can control; others we have little influence on.

As we move into the 1990s, we are realizing that our quest for economic prosperity without regard for environmental well-being can lead to a decline in our quality of life, as well as decreased economic benefits and social stability. As the fragility of the environment has become clear, linking economic viability and environmental preservation has become essential.

D. Managing the Transition

Moving towards sustainable development can potentially affect the province's economy and many of its communities. It is important to understand that all the changes cannot take place overnight, and when they occur there is likely to be some dislocation and disruption. We will also have to deal with uncertainty. Although we are beginning to understand the problems, the solutions are not always readily apparent. In some cases, we will need time for further assessment and investigation.

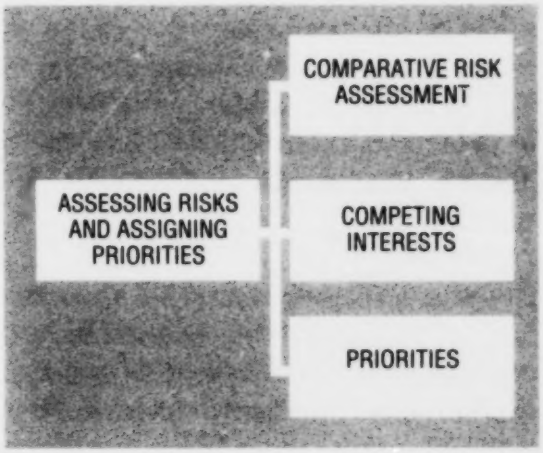
Better environmental protection will, in some instances, lead to higher costs and prices for both industry and society. Other changes may be economically beneficial. We should acknowledge that the extent of the economic costs and rewards are difficult to predict. Care must be taken to make sure that new environmental policies, laws and programs cause minimal disruption, and that as many people and stakeholder groups as possible understand and accept them.

Consequently, we must carefully manage the transition period. The passage to sustainable development should embody a firm commitment to a stable economy, minimizing groundless concerns and building confidence in the future.

Industries and communities must be assured that the province will not take random and indiscriminate action to protect the natural world without considering the economic impacts. Any proposed changes must be carried out in a way that causes the least disturbance to existing industries and communities. In addition, the changes should involve consultation and discussion and, where necessary, the assumption of the costs of the transition program.

2
Assessing Risks and Assigning Priorities

Hardly a day goes by when we do not learn of the pressing need to address yet another critical environmental issue. Whether they be local, regional or global in nature, those issues compete for our interest. It is often difficult to determine how important an issue is, and which ones should receive the most attention.



If we are to set priorities and make sound decisions to protect our environment, we must first assess current and potential environmental problems. That calls for accurate, thorough information on all aspects of ecological health and on the nature of the various environmental threats.

The task is not simple. Ecological issues are complex and often interrelated. In some areas, the information is incomplete or nonexistent. In others, our judgement may be swayed by pressures to respond to short-term issues or unsubstantiated concerns. And in all areas, we are hampered by limited amounts of time, money and staff for environmental protection and enhancement.

Despite the hurdles, decisions must be made. B.C. Environment has defined seven broad priorities for environmental action, as outlined in the following sections.

A. Comparative Risk Assessment

In establishing its priorities, B.C. Environment has drawn on the insights and knowledge of personnel from several environment and resource management ministries. That group, known as the "risk assessment committee," defined the degree of risk associated with the environmental issues of today. The issues were

grouped into two major types: those resulting from pollution, and those related to resource use and management.

Pollution Threats — The risk assessment committee identified and assessed an initial list of 121 sources of pollution that pose possible threats to human health and the environment. Factors they considered include the toxicity of the pollution, the potential threat to public health, the probability of the problem continuing in the future, and the long-term threat to environmental sustainability. After considering the ability of current regulations and protection measures to address each threat, the committee concluded that the following kinds of pollution pose the highest risks:

- Contaminated sites
- Persistent organic chemicals
- Toxic chemical spills
- Industrial emissions
- Mine waste
- Pulp mill effluent
- Damage to drinking-water quality
- Heavy metals
- Industrial liquid waste
- Hazardous waste
- Pesticides
- Agricultural waste

Resource Management Issues — The committee drew up a list of 24 major resource issues. In assessing the significance of those issues, the committee considered criteria such as the reversibility of the impact, the size of the area affected, the degree to which more than one component of the ecosystem is affected, and the degree to which the effect cannot be managed with existing resources. The committee concluded that the most pressing resource-related issues facing the environment are, in order of magnitude:

1. The potential impacts of global climate change.
2. Loss of natural areas, land productivity and biodiversity.
3. Site-specific impacts of development on natural systems.
4. The encroachment of urban areas on natural and productive lands.
5. Cultural, recreational and scenic concerns created by development pressures.

B.C. Environment has a mandate for the integrated management of the environment and is committed to ensuring that all sectors of society take action on those important issues.

B. Competing Interests

There are many interconnections and overlaps among the pollution threats and resource issues identified in the risk assessment exercise. Those relationships create a very complex set of challenges when it comes to determining work priorities. Our approaches to addressing environmental issues must be broad enough to ensure that a solution to one issue does not simply transfer the risk or impact to another area. The overlap between issues also encourages the implementation of programs that will result in long-term solutions to a number of issues, rather than having to treat them one by one. For example, policies and strategies that focus on preventing pollution and reducing or eliminating the use of toxic chemicals are preferred to addressing the problems after they occur.

Comparative risk assessment is only one source of input that B.C. Environment considers when determining how it should allocate its resources. The ministry receives strong advice from all sides of the environmental debate on a daily basis; in many ways it serves as a clearinghouse for environmental opinions.

We must weigh all the information and focus our efforts where they can accomplish the most. We must also seriously consider the public's desires, the programs and priorities of our many partners in environmental management, Canada's international obligations and the funds provided by the provincial government.

We can't do everything at once. The private and public costs associated with many of the issues will be in the billions of dollars. Of equal importance is the potential cost to society of not taking action, which may well be even greater over the long term.

C. Priorities

B.C. Environment has examined all the factors that have a bearing on how we should allocate our time and money, and grouped the major issues that we propose to pursue into seven priority areas. Five of them deal with what the ministry does in "getting on with the job." The other two relate to how we will go about "improving our approaches."

Getting on with the Job

1. ***Ensuring Clean Land*** — Reducing the overall amount of waste that enters the environment and enforcing tighter controls over industrial waste.

2, 3 and 4. ***Sustaining Water, Fisheries and Wildlife*** — Ensuring better protection of water quality and proper allocation, as well as the preservation of fish and wildlife and their habitats.

5. ***Ensuring Clean Air*** — Ensuring clean air by reducing industrial, domestic and vehicular emissions.

Improving our Approaches

6. ***Building Partnerships*** — Building partnerships with governments and the public.

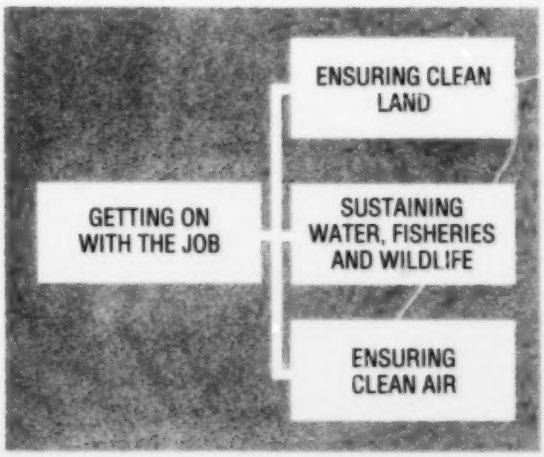
7. ***Developing New Tools*** — Utilizing the best available technologies, supported by innovative policies and progressive legislation.

3
GETTING ON WITH THE JOB

"While we do not yet face an environmental crisis, this province has accumulated an environmental deficit through its economic growth. We must adapt, strengthen, and apply our management institutions and mechanisms to meet the chalienge of harmonizing economic development with environmental sustainability."

— Sustaining the Living Land, Report of the B.C. Task Force on Environment and Economy, 1989

Environmental protection requires that we move from organizing principles and a sound understanding of the scientific and economic factors to action — we need to get on with the job. The following outlines our commitment to action in these priority areas: ensuring a clean and productive land base; sustaining our water, fisheries and wildlife; and ensuring clean air.



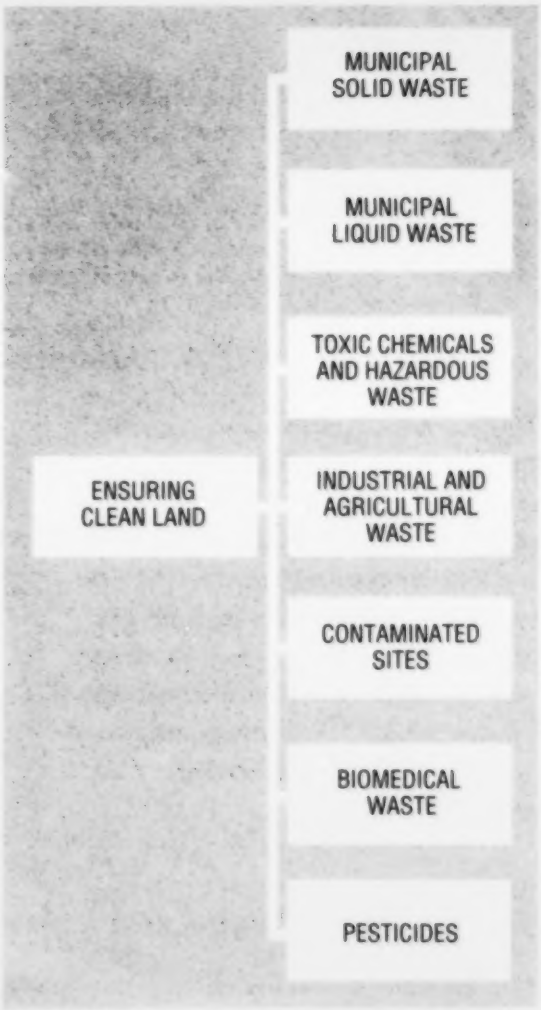
A. Ensuring Clean Land

Every society must manage its waste so that the good health of our natural world and all its inhabitants is not harmed. That is a clear and unavoidable responsibility. Our long-term goal is to achieve zero pollution in the receiving environment. Achieving this goal in a thorough and cost-effective manner will be a major challenge, requiring a concerted effort by us all. Important progress has already been made, but it only sets the stage for even more improvements.

We will, therefore, develop detailed management strategies for all the kinds of waste in British Columbia: municipal waste (solid and liquid), toxic chemicals and hazardous waste, industrial and agricultural waste, and biomedical waste. We will also deal with pesticides and contaminated sites.

1. Municipal Solid Waste

Municipal solid waste (MSW) is the technical term for garbage. It consists of the things people and industries throw away. As disposal sites become more limited and expensive, reducing waste and handling it efficiently is becoming increasingly essential.



British Columbians produce about 2.4 million tonnes of solid waste each year. Approximately 45 percent is residential and 55 percent is industrial/commercial/ institutional. Of the total waste, the two main kinds are paper (34 percent) and organics (36 percent).

At the moment, only seven percent of British Columbia's municipal solid waste is actually recovered. There is very significant room for improvement here, since other jurisdictions recover a substantially greater percentage of their MSW. However, first we must overcome numerous barriers to waste reduction and recycling.

Recycling is underway in 31 communities. But it accounts for only a small portion of the total refuse produced and it involves only select materials. Collection and reprocessing costs tend to exceed the revenue from the final products; so the activity is not yet "sustainable."

The report of B.C. Environment's Task Force on Municipal Solid Waste *(A Solid Waste Strategy for B.C.)* was approved in June 1989. Much of what was recommended has been accepted. We are in the second year of the first five-year implementation plan.

Strategic Directions and Actions

B.C. Environment is undertaking the following programs and policies to better manage municipal solid waste:

- **Major Reduction of Municipal Solid Waste** —The ministry is committed to helping British Columbians substantially decrease municipal solid waste — by at least 30 percent by 1995, and at least 50 percent by the year 2000.

- **Target Reductions for Tires, Oil and Batteries, by Year 2000** — The ministry will establish more stringent targets for certain kinds of waste that are particularly good for recycling or recovery, such as tires, oil and batteries. The reductions will be aimed at the generators, distributors and consumers of waste-creating products.

- **Environmental Industries Strategy** — In collaboration with the Ministry of Development, Trade and Tourism, B.C. Environment will develop an environmental recycling and waste reduction industries program. The goal is to promote the creation and application of innovative waste reduction technologies by B.C. industries.

- **Packaging Protocol** — The ministry will fully implement the National Packaging Protocol, in concert with the federal government and other provincial ministries. It will thereby reduce the amount of packaging sent for disposal in B.C. (as measured against the amount in 1988) by: 20 percent by the end of 1992; 35 percent by the end of 1996; and 50 percent by the end of 2000.

- **Litter-Free B.C.** — By fall 1991, the government will establish "Litter-Free B.C." — an advisory council charged with developing and initiating litter control policies. The council will consist of a partnership between the government, volunteer organizations and the industries that produce or deal in litter-creating materials.

- **Waste Reduction Legislation** — The ministry will legislate the new waste reduction measures needed to create, provide incentives for and effectively implement programs and policies on waste reduction and recycling — where voluntary partnerships between industry and government fail to attain waste reduction targets. This initiative will be part of the overall review of en-

vironmental protection legislation and will be the subject of a detailed discussion paper. (See Chapter 5, Section B for more information.)

- **Beverage Container Strategy** — In consultation with industry, the ministry will develop and implement comprehensive policies on the reuse and recycling of all beverage containers by the spring of 1992.

2. Municipal Liquid Waste

The phrase "Everything has to go somewhere" becomes foreboding when the "everything" refers to the many kinds of liquid waste discharged by our communities. The "somewhere" is, unfortunately, our rivers, streams, groundwater and ocean. Water pollution is the result. And it is intensifying, along with threats to human health and the natural world. Three major aspects of liquid waste management require our attention:

Sewage — Although most B.C. communities provide at least secondary sewage treatment, the largest two population centres, Greater Vancouver and Greater Victoria, do not. In rural areas, sewage treatment has traditionally been carried out by septic tanks and tile field systems. That is acceptable in remote locations, but problems develop when urbanization affects nearby water bodies or groundwater. Sewage from boats on environmentally sensitive water bodies is another key concern.

Sludge — Where secondary treatment is employed it produces a sludge that requires management. In some cases, sludge is being discharged into the receiving waters along with the secondary treated liquid.

Stormwater — Municipal stormwater often contains contaminants due to inappropriate connections to industrial waste discharges, overflows from sewage collection systems, and runoff from parking lots and roads. Collectively, those pollutants can harm water quality by adding persistent toxicants, nutrients which stimulate a damaging overgrowth of algae, and disease organisms.

The ministry has managed municipal liquid waste issues through responsible enforcement. We have also encouraged and assisted the upgrading of sewage treatment plants, and in many areas that has kept pace with population growth. Further research will be undertaken to determine what other upgrading is necessary.

Strategic Directions and Actions

The following programs and policies are now being carried out or considered to improve the management of municipal liquid waste:

- **Improving Sewage Treatment** — The ministry will work with the Ministry of Municipal Affairs, Recreation and Culture and local governments to provide secondary waste treatment or to complete approved waste management plans by 1995. That will involve technical assistance and considering new options to finance facilities which can protect B.C.'s water quality from increasing volumes of sewage discharges.

- **Sludge Management** — In order to set up a sludge management system by 2000, the ministry will require all affected municipalities to submit a sludge management plan by 1995.

- **Septic Tank Pollution** — The ministry, in collaboration with the Ministry of Health, will study the extent of pollution caused by faulty septic tank systems and take steps to better regulate septic systems by no later than the spring of 1993.

- **Regulation of Sewage from Boats** — The ministry will designate sensitive water bodies under the Canada Shipping Act, which will invoke control regulations on sewage discharges from boats.

- **Improved Stormwater Systems** — The ministry will call for the inspection of all municipal stormwater systems to pinpoint inappropriate connections. Furthermore, it will require communities to submit a stormwater discharge plan, as part of their overall waste management strategy, by 1995. The target is the complete regulation of stormwater pollution by the end of the decade.

3. Toxic Chemicals and Hazardous Waste

Toxic chemicals can pose risks to the environment and human health. However, if they are properly managed and applied, most can be safely used and need never become "waste" or "residues."

In the past, the tendency has been to focus on regulation at the end of the industrial or commercial cycle, after the chemicals have become "waste" and a potential environmental threat.

While "end-of-pipe" regulation will always be important, we now understand the need to pay more attention to preventive measures. The new approach is to control toxic substances from the point of manufacture right through to disposal. The challenge is to integrate existing programs and fresh initiatives into a comprehensive "cradle-to-grave" management of toxic chemicals. In addition to preventive measures and modern, effective regulation, the approach requires a comprehensive hazardous waste management system.

In British Columbia, approximately 110,000 tonnes of hazardous waste were generated in 1989 alone, with almost 80 percent of it produced in the Greater Vancouver area. Some hazardous waste is properly managed by temporary storage, recycling and other processes. But significant amounts are sent the route of ordinary waste — through municipal sewer systems, storm drains and landfills which do not have adequate environmental protection. That is especially true of waste from small firms. Households also generate hazardous waste, such as pesticides, paints, varnishes, cleansers, motor oil, batteries and disinfectants.

A small portion of British Columbia's special waste is transported to disposal or treatment facilities outside the province, but even that option is narrowing. The kinds of hazardous waste which cannot be recycled or treated at their source must be safely stored until a comprehensive management system is in place.

Past experience with the siting of hazardous waste facilities has changed the ministry's focus. Its goal now is on creating a more comprehensive hazardous waste management system. The new emphasis is more on waste prevention and reduction, than on treatment and disposal.

Creating a dedicated agency is an important step towards a better system of controlling hazardous waste. Hence, the British Columbia Hazardous Waste Management Corporation was established by an act of the legislature in June 1990. The corporation will see to the development, implementation and maintenance of a hazardous waste management system for British Columbia.

The system designed and executed by the Hazardous Waste Management Corporation will only be as successful as the rigour of the related legislation, regulations

and enforcement. Therefore, the role played by B.C. Environment is crucial to building a potent system. A number of steps have recently been taken to strengthen regulation.

Strategic Directions and Actions

To effectively manage and dispose of toxic chemicals, the following programs are being implemented or considered:

- **Legislation and Regulations on Hazardous Waste Management** — As part of the overall review of environmental protection legislation, the ministry will complete a thorough review of current provisions and regulations. The goal will be to fill any gaps in the current regulatory regime and to ensure the safe manufacture, storage, handling and disposal of toxic chemicals and other kinds of hazardous waste.

- **Hazardous Waste Reduction** — The ministry is committed to substantially reducing the amount of hazardous waste generated in B.C. — by 50 percent by the end of the decade. Waste reduction plans developed by industry and municipalities will play a key role in this initiative.

- **Underground Storage Tanks** — The ministry will develop regulations to strengthen the control of underground storage tanks.

- **National and Regional Cooperation** — The Hazardous Waste Management Corporation and the ministry will work with the other jurisdictions, the federal government and neighbouring states to develop regional schemes for handling hazardous waste.

- **Elimination of PCBs** — The Hazardous Waste Management Corporation will complete the action plan on PCB elimination to ensure:
  - — Removal and safe storage of all PCBs now stored at schools and hospitals.
  - — Destruction of all PCBs in storage by 1995.
  - — Elimination of all PCBs by the end of the decade.

- **Comprehensive Hazardous Waste Management System** — The corporation will ensure the creation and implementation of a comprehensive hazardous waste management system, including the siting of appropriate treatment, disposal and storage facilities, by 1995.

- **Comprehensive Household Hazardous Waste System** — Through consultation with municipalities and industry, the Hazardous Waste Management Corporation will develop an effective management system for household hazardous waste, by spring 1992.

4. Industrial and Agricultural Waste

Industrial development and agriculture generate waste that adds to the damaging pressures on the environment. In the case of industrial liquid waste, the risk assessment committee placed it in the highest category of potential harm to human health and environmental quality. As we gain more knowledge of the dangers of industrial effluent, we are acutely aware of the need to revise many of the discharge limits. Now is the time to transform our management of industrial waste by making it more vigorous and up-to-date.

We have to continually review and update the pollution control regulations and goals governing various sectors of industry and other economic activity. The ministry recently has taken regulatory actions on certain pollution sources, such as pulp and paper industries. We must coordinate such revisions with the work of neighbouring jurisdictions and the federal government.

A more recent issue is the environmental impact of intensive agriculture, including pesticides and fertilizers. The environmental degradation caused by animal waste in both surface water and groundwater is also intensifying.

Strategic Directions and Actions

B.C. Environment is carrying out or considering the following programs and policies to manage industrial and agricultural waste:

- **Pollution Control Objectives** — By 1995, the ministry will complete a thorough review and updating of all the pollution control objectives dealing with

the major categories (chemical, petroleum, mining and smelting, forestry, municipal and agricultural). Greater clarity, better consultation and more consistent application of policy are the goals of this initiative. The long-term goal of this initiative is zero discharge of pollutants into the receiving environment.

- **Agriculture Code of Good Practice** — B.C. Environment will assist the Ministry of Agriculture, Fisheries and Food to introduce an agricultural waste control regulation which will establish a code of agricultural practice for waste management.

- **Discussion Paper on "Best Available Control Technology"** — The ministry will release a discussion paper on applying the concept of "best available control technology" (BACT) for establishing waste control standards, for public review.

5. Contaminated Sites

The redevelopment of industrial land for urban and recreational uses can present a threat if that land contains unidentified pollutants. In fact, such redevelopment is happening now, at an accelerated rate. Our growing awareness of that potential environmental risk has spawned new environmental standards that stringently control toxic chemical waste. We cannot afford to stop here. Government and industry must clean up the pollution. The ministry is responding in a number of ways, which include those below:

- Developing legislative amendments to clarify responsibility for site cleanup.
- Providing for consistency in applying legislation and cleanup criteria, in carrying out site investigations.
- Advising and assisting local governments and industry.
- Facilitating the development of remedial technologies.

The passage of the Special Waste Regulation and recent amendments to the Waste Management Act represent the first step towards the thorough management of contaminated sites. The legislation provides for:

- Certification of contaminated sites that have been cleaned safely.

- Collection of fees to cover government assessment and cleanup.
- Requirement of immediate cleanups, when necessary.

In the spring of 1991, a discussion paper was released for public consultation outlining new policies for cleaning up and regulating contaminated sites.

Strategic Directions and Actions

The following programs and policies are now being undertaken or considered to effectively handle contaminated sites:

- **Legislation on Contaminated Sites** — As part of the overall review of environmental protection laws, the ministry will create legislation and regulations needed to fully control contaminated sites.

- **Site Assessment and Ranking Criteria** — The ministry will work with the federal government and other provinces to establish a nationally consistent system for assessing and ranking contaminated sites, by fall 1991.

- **Site Remediation Criteria** — The ministry will work with other provinces and the federal government to establish nationally consistent criteria for site remediation.

- **Technological Support** — The ministry will continue to promote the development of innovative methods and technologies for remediating contaminated sites. This initiative will be conducted in conjunction with the federal government.

- **Inventory of Sites** — The ministry will develop and then routinely publish an inventory of contaminated sites, within six months of the necessary legislative authority being established.

6. Biomedical Waste

Our province's medical, dental and veterinary facilities produce from 10 to 16 tonnes of biomedical waste, each day — 3,600 to 5,800 tonnes, each year. Most of B.C.'s biomedical waste is incinerated on-site by the institutions themselves or off-site,

through disposal contracts. At present, 68 incinerators are operating at various hospitals across the province, but none of them have proper emission control equipment. Furthermore, the incinerators would probably not meet the recently proposed provincial criteria for biomedical waste incinerators.

In 1987, an interministerial task force was created to study the biomedical waste situation in the province, following reports of problems from biomedical waste disposal in North Vancouver. The task force discovered that a number of hospitals routinely disposed of their pharmaceutical and chemical waste by incineration. That, despite the fact that many of those materials qualified as hazardous waste, and none of the incinerators had B.C. Environment permits for hazardous waste disposal.

As a result of the task force report, the provincial ministry formed the Biomedical Waste System Planning Committee in October 1989 to develop an efficient and safe disposal system for provincial biomedical waste. Amendments made to the Waste Management Act in 1990 give B.C. Environment the power to regulate effectively in this area.

Strategic Directions and Actions

These programs and policies are now being carried out or considered in the area of biomedical waste:

- **Comprehensive Biomedical Waste System** — In cooperation with the regional districts and hospitals, the ministry will establish a comprehensive provincial biomedical waste system, including a provincial treatment facility, by spring 1993.

- **National Code of Practice on Biomedical Waste** — The ministry will participate in completing a national code of practice for biomedical waste, to establish uniform minimum requirements for handling such waste throughout Canada.

- **Regulations on Biomedical Waste** — The ministry will develop, for consultation and discussion, regulations and controls on biomedical waste in 1991.

- **Regulation of Incinerators** — The ministry will develop provincial emission criteria for biomedical waste incinerators, to apply to all new incinerators designed and installed to burn biomedical waste. Those objectives are to be met no later than fall 1993.

7. Pesticides

In 1989, about $22 million worth of pesticides were applied in British Columbia. B.C. Environment understands the need to regulate those useful yet potentially harmful substances to protect human health and the environment.

Although British Columbia accounts for only 3.5 percent of the total amount of pesticides used in Canada, both the quantity and variety are increasing. Increased pesticide use is due to pest resistance and new crops, along with rising demands that our produce meet vital sanitary standards. It has also been triggered by the need to increase crop production on a land base subject to integrated resource management. As part of its ongoing commitment to environmental protection,

B.C. Environment plans to encourage the use of nonchemical alternatives through its Pesticide Management Program. That integrated approach to pest management complements other ministry initiatives designed to achieve a sustainable environment.

B.C. Environment also acknowledges that the public wants to participate in decisions affecting the environment. The public regularly raises specific concerns related to the perceived lack of input into decision making on pesticide use. The ministry must address that issue through the Pesticide Management Program. The task will not be easy, since decisions on pesticide use involve complex — often competing — private and public sector interests.

All herbicide applications for forestry and other uses on public land are controlled through pesticide use permits issued by the Pesticide Management Program. Permit applications are reviewed by a number of provincial and federal agencies before being approved.

Strategic Directions and Actions

These programs and policies are being implemented or considered to ensure the safe use of pesticides:

- **Significant Reductions in Pesticide Use** — The ministry is committed to a reduction of at least 25 percent in pesticide use by the year 2000. That will be accomplished by working with both users and industry to encourage more selective and effective application.

- **Research into Integrated Pest Management** — The ministry will encourage and fund research into new integrated pest management methods.

- **Training-and-Certification Program on Pesticide Use** — Over the next three years, the ministry will introduce a new program to train and certify farmers who use restricted pesticides — to prevent accidental misuse. The program will be run through the Ministry of Agriculture, Fisheries and Food and B.C. Environment.

- **Monitoring Pesticides in the Environment** — The ministry will measure and monitor pesticide residue levels in various segments of the environment to assess trends in pesticide use and environmental impacts.

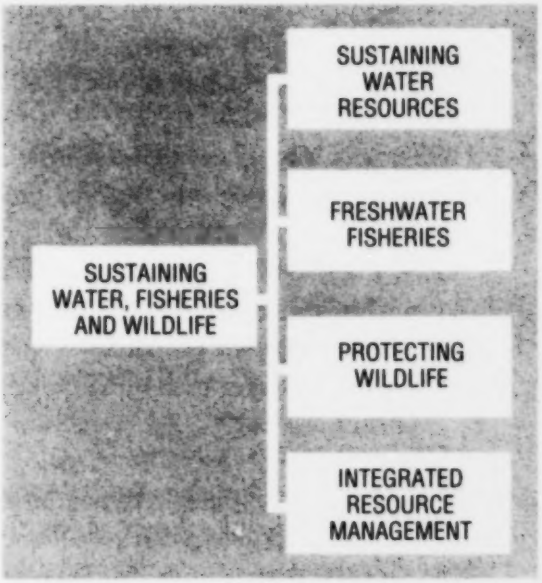
- **Public Notification** — The ministry will require that the public be notified about all permit applications before the permits are approved, to allow enough time for public input into the approval process.

- **Pesticide Advisory Committee** — The current Pesticide Control Committee will be expanded to include a broad base of community representation. The new committee (Pesticide Advisory Committee) will be asked to comment on all aspects of pesticide use, including policy matters.

- **Discussion Paper on Pesticides** — The ministry will release *New Directions in Pesticide Management* concurrently with *Environment 2001*. The paper focuses on the policies and practices related to pesticide use in the province, for public review and comment. (This paper is discussed in more detail in chapter 5, Section B.)

B. Sustaining Water, Fisheries and Wildlife

British Columbia is blessed with abundant and, in most areas, clean and safe water. The danger signs are beginning to appear, however. Water shortages and pollution are on the rise, especially in the case of groundwater. In addition, the incidence of waterborne disease is significantly higher in B.C. than in Canada as a whole.



Our province is also famous for its plentiful and diverse fish and wildlife, which offer immense economic and social rewards. British Columbia has more wildlife species, in total, and more that are exclusive to this province than any other province in Canada.

Much of the land on which those animals depend is in demand for a variety of other uses, many of which are not compatible with wildlife. Valuable but vulnerable habitats include old-growth forests, estuaries and wetlands. Much of the wildlife habitat is in valley bottoms, where pressures from other land uses are the most intense.

British Columbia's freshwater fisheries have a significance far beyond their value to anglers. They are a vital environmental and economic asset — a key indicator of the health of freshwater systems and the basis of local tourism throughout much of the province.

Much is at stake. Recent surveys show that wildlife- and fisheries-related activities provide recreation for most British Columbians, are an essential factor in tourism and contribute substantially to the provincial economy. Moreover, many B.C. wildlife populations are of international importance. Preserving the natural biodiversity of our land will allow us to pass on a rich living legacy to future generations.

Water, fisheries and wildlife can be affected by many resource uses, such as forestry, mining, agriculture, hydro-electric development and human settlement. If we are to protect them, we must make their well-being essential considerations in the approval process, planning and operation of resource developments. A careful system of integrated resource management will play a key role here.

Native people will assume an increasingly important responsibility in the stewardship and management of wildlife and fishery resources. Since many Native communities rely on fish and wild game for their food and livelihood, the future sustainability and viability of those resources are of special importance to them.

Preserving and enriching water, fisheries and wildlife will be a major priority for B.C. Environment in the coming years, and will generate important changes in programs and legislation.

1. Sustaining Water Resources

As our population and industries grow, so does our demand for water. We must recognize, however, that water is essential not only to human survival and enterprise. It is the very lifeblood of Planet Earth. Proper stewardship of such a precious resource is vital to sustaining healthy ecosystems and, in turn, a sound economy.

Ensuring clean and plentiful water for British Columbia is as complex a task as it is crucial. So many activities affect the condition of our water: manufacturing, agriculture, forestry and urbanization. Sustaining a healthy water resource is very much a question of either paying for prevention now or paying for cleanup and mitigation later — at a much higher environmental and economic cost.

Managing the sources of water pollution is discussed elsewhere in *Environment 2001*. Here, we will focus on setting quality objectives to deal with such complicated issues as water management and allocation. We will discuss maintaining the quality and supply of water, controlling waterborne disease and protecting groundwater.

Strategic Directions and Actions

These initiatives describe what B.C. Environment is doing now, or is considering doing in the future, to sustain healthy and abundant water:

- **Water Management Legislation** — As part of its legislative review, B.C. Environment will draft an entirely new Water Management Act to implement policies outlined in *Sustaining the Water Resource* (see final bullet of this section).

- **Water Quality Objectives** — The ministry will continue to develop water quality objectives for specific lakes and rivers, in consultation with the public and water users.

- **Instream Flow Protection** — The ministry will develop instream flow protection measures to ensure that a sufficient quantity and quality of water is available for fisheries habitat, wildlife needs and other instream uses, where justified.

- **Water Management Planning** — The ministry will continue to develop its capacity to prepare water management plans — to allow for comprehensive and integrated planning of water resources, basin-by-basin, within the next year. The public will be encouraged to take part in creating those plans.

- **Protecting and Managing Groundwater** — The ministry will implement the following changes, to improve the protection and management of groundwater:

  — Increase the monitoring of groundwater, with emphasis on community wells.

  — As part of the legislative review, propose legislation to regulate the use of groundwater and protect groundwater quality. That will include the legislative authority to certify well drillers, establish standards for well construction and license groundwater use.

- **Water Exports** — Upon completion of public consultation, the ministry will develop a comprehensive water export policy for release by the end of 1991.

- **Discussion Paper — *Sustaining the Water Resource*** — The ministry will release *Sustaining the Water Resource* for public discussion and review. The document will deal in depth with many of the changes proposed to improve water management and protection.(Chapter 5, Section B elaborates on this discussion paper.)

2. Freshwater Fisheries

The fisheries of British Columbia are a vital part of our environment and economy. The resource supports world-renowned sport fishing which provides the province with substantial recreational and economic benefits. Fish are also very important to the culture and subsistence of our aboriginal people.

The cornerstone of the fisheries resource is clean and abundant water. Fish are affected not only by pollution, but also by streamside activities related to logging, mining, agriculture and other resource industries. Protecting fish habitat must be an important component of planning and developing other resource uses.

Overfishing and habitat destruction are threatening the fisheries' health and productivity. The 1990s will be a critical decade in determining its future. We must, therefore, take assertive action to enhance and protect both fish stocks and habitat.

There are 73 species of freshwater fish in British Columbia, but anglers tend to focus on trout, char and salmon — species with relatively strict habitat requirements. In 1985, 419,000 freshwater anglers spent over $300 million in pursuit of their sport, catching approximately 9.4 million fish.

Over the last 30 years, sport fishing in B.C. has increased from about two million angler-days per year to six million. The catch success, though, has declined from over three fish per angler-day to 2.5 fish per angler-day. About 30 percent of the catch consists of hatchery fish raised from eggs taken from wild fish.

Since 1983, 131 enhancement projects have been conducted under the Habitat Conservation Fund. What is more, the Public Conservation Assistance Fund has supplied public-spirited groups with the resources to conduct small but locally important fishery projects, since 1974.

Strategic Directions and Actions

The following programs and policies are now being undertaken or considered to ensure the wise management of our fisheries:

- **A Commitment to Integrated Management** — The ministry will strengthen the role of the Fisheries Program in the integrated management of resources.

- **Appropriate Allocation** — The ministry will ensure an appropriate allocation between resident anglers and angling-related businesses.

- **Native Use of Fisheries** — The ministry will develop policy and programs to involve Native people in the cooperative management of fisheries.

- ***Fisheries Program Strategic Plan — Conserving Our Resource,*** the Fisheries Program's strategic plan for 1991 to 1995, is now available for public review. (For more information on this plan, see Chapter 5, Section B).

3. Protecting Wildlife

In a world that is rapidly losing its wildlife to environmental ills, resource depletion and urbanization, we still have magnificent, diverse and abundant species of wildlife. There is no denying that B.C.'s wildlife is threatened by the pressures of many resource uses. But we still have a good chance to preserve it, through wise stewardship and careful planning.

Although B.C. Environment does not have administrative control over most wildlife habitat, it does contribute to land use decisions through the interagency planning and referral processes in order to minimize ecological impacts. Those processes are especially important since the future of wildlife will be dictated largely by forestry and agricultural practices, as well as increased access to wilderness areas.

Where wildlife management objectives cannot be achieved by any other method, the ministry attempts to secure tenure to land. It now administers 61,800 hectares of land for wildlife management, including nine Wildlife Management Areas which have been designated for the preservation of important wildlife populations.

Habitat enhancement is also being undertaken at sites across the province. Since the creation of the Habitat Conservation Fund in 1981, over 336 wildlife enhancement

projects have been undertaken. That includes "prescribed burning" of vegetation; placement of nesting structures for waterfowl, small birds and mammals; and regulation of water levels in marshlands.

The Wildlife Program must be more responsive to the needs of nontraditional wildlife uses. It must, furthermore, expand the range of opportunities available. The program will also be forced to come to grips with ethical questions about the use of animals, and to deal with groups that question traditional activities such as hunting. In the long run, the ethical and social pressures may be as important in shaping the future of wildlife management as the technical and ecological concerns.

Generally, much more attention needs to be paid to protecting and regenerating endangered and vulnerable species of all kinds. A special emphasis must be placed on managing large predators. Hard decisions are necessary if we are to protect the animals whose well-being depends on mature forest and the lack of human disturbance. Our ministry's success in wildlife management will be demonstrated by how well we safeguard such species as grizzlies, cougars and wolves that have disappeared from much of this continent — species that make B.C.'s mosaic of wildlife unique.

Strategic Directions and Actions

The initiatives below describe the measures that are either being taken now or are under consideration for the future, in the area of wildlife management:

- **Completion of Wildlife Inventory** — A priority for B.C. Environment will be a province-wide inventory of the wildlife resource by 1995, as the basis for better integrated management.

- **Status of Nongame Species** — The ministry will place more emphasis on determining the status of B.C.'s 400 nongame species, through inventory and research. The purpose is to identify which species require more protection.

- **Protection for Endangered Species** — As part of its legislative proposals on wildlife, fisheries and habitat protection, the ministry will propose new provisions and procedures to safeguard endangered and vulnerable species.

- **Enhancement of Wildlife Viewing Program** — The ministry will continue to expand the Wildlife Viewing Program to give the public more opportunities to watch wildlife in its natural state, at strategic locations.

- **Wildlife Allocation** — The ministry will revise the process for apportioning wildlife among user groups to reconcile the demands of traditional users (such as residents, guides, trappers and Native bands) with new demands for backcountry recreation and increased access for development.

- **Native Involvement in Wildlife Management** — The ministry will involve aboriginal people in the cooperative stewardship of wildlife, especially as it relates to wildlife conservation and sharing wildlife for food and cultural use.

- **Code of Practice for Commercial Recreational Enterprises** — The ministry will encourage commercial recreational enterprises that exploit fish and wildlife populations to adopt a code of practice which emphasizes quality of experience, and downplays competition and extravagant catches.

- **Discussion Paper** — ***Managing Wildlife to 2001*** — The ministry will release this discussion paper for public comment in the summer of 1991. The document will propose the priorities and new directions for wildlife management for the 1990s. (See Chapter 5, Section B, for more details.)

4. Integrated Resource Management

The fish, wildlife and water resources of our province do not exist in isolation from other environmental issues and resource activities. The factors that most affect their future are generally those not under B.C. Environment's control. Those valuable resources can be harmed or helped by impacts from development such as logging, mining, agriculture, energy generation and transportation networks.

It is important that our environmental strategy for the 1990s protects the unique biodiversity of our province. This involves assessing the impacts of development on fish, wildlife and water. It should, moreover, ensure that concerns related to protecting and conserving those resources are incorporated into the design and planning for other resource uses.

We will need to set aside additional areas mainly to protect special fish, wildlife and

water values. However, of equal importance is managing and protecting those resources on lands shared by resource industries and other user groups. Integrated resource management for a variety of purposes and values will be the strategy of tomorrow.

Integrated resource management identifies and considers all resource values including social, economic and environmental needs, in deciding on land use and development. It places appropriate emphasis on resource use, land use and management — based on a good knowledge of ecological systems, the capability of the land and the mixture of possible benefits. The success of integrated resource management depends on a number of prerequisites:

- An adequate inventory of all resource values so impacts can be assessed.
- An orderly process to bring all information together and assess how one resource use will affect another.
- A credible means of decision making and conflict resolution, preferably at the local and regional levels.
- Provincial and regional goals which will help to set priorities for an area and guide the decision-making process.

Strategic Directions and Actions

Here are the initiatives and policies which B.C. Environment is considering or already implementing in the realm of integrated resource management:

- **Completion of Inventories** — The ministry will continue to make completing inventories of fish, wildlife and water resources a high priority for funding in the 1990s. Such inventory information will ensure a balanced resource data base when the value of those resources is assessed against that of development and extraction.

- **Conservation of Natural Areas** — The ministry will press for the completion of Parks Plan '90, the Forest Wilderness System and, where necessary, the designation of important Wildlife Management Areas by the turn of the century. That will ensure enough natural conservation areas to maintain the unique biodiversity of our province.

- **Access Management** — The ministry will implement better access management policies at the regional level, consistent with the newly developed Resource Road Policy. Emphasis will be on abandoning roads to restore wilderness and recreational quality in developed areas.

- **Land Use Planning** — The ministry will maintain a strong advocate role in the follow-up to important land-use planning initiatives like the Forest Resources Commission and the B.C. Round Table. Where possible, B.C. Environment will also promote and aid the completion of a workable provincial land use strategy, in the next two years.

- **Development of Guidelines for Industry** — The ministry will work closely with the Ministry of Forests, the federal Department of Fisheries and Oceans, the forest industry and environmental groups to finish planning and operational guidelines for forestry, wildlife, fish and water. Building on the success of the existing Coastal Fish/Forestry Guidelines, the new guidelines will be done for both the coastal region and the Interior by 1994.

- **Geographic Information Systems** — By 1995, the ministry will develop and implement a geographic information system (GIS), to improve and facilitate ministry input into government-wide resource referral and planning systems.

- **Delegation of Authority** — In cooperation with the Ministry of Forests and the forest industry, B.C. Environment will explore sharing with tenure holders the responsibility for certain aspects of fish and wildlife protection, on a trial basis. The ministry will continue to set standards and enforce performance. Such pilot projects will make better use of available human and financial resources in protecting fish and wildlife.

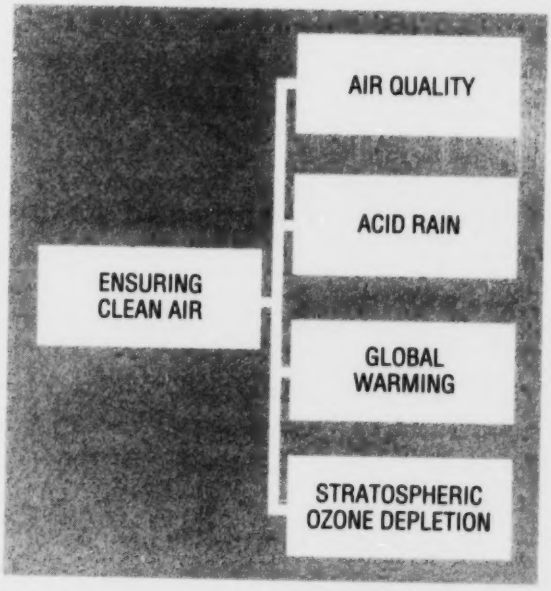
C. Ensuring Clean Air

Atmospheric purity is jeopardized on the local, national and global scale. In fact, it is already deteriorating in many regions of the world. We British Columbians value the high quality of air that still exists in much of our province, and we want to keep it clean. In areas where the atmosphere is polluted we want to turn the situation

around. With our rugged mountains, fertile valleys and rich supply of natural resources, we must contend with a set of air pollution challenges unique to our province.

British Columbians are also concerned about the global degradation of the atmosphere resulting from the collective impact of human activity. We are eager to play our part, as members of the "global commons," in finding solutions.

To that end, we will create programs to improve air quality, reduce acid rain, develop B.C.'s role in a national strategy on global warming and control substances that deplete the ozone layer.



1. Air Quality

The causes of air pollution are many and complex. In urban areas, car emissions are the chief source, releasing nitrogen oxides (NO_x) and volatile organic compounds (VOCs) which cause photochemical smog — a particular problem in the Lower Mainland. Population growth and urban expansion have resulted in more cars and longer distances to travel, creating even more atmospheric pollution.

Stringent emission standards for new vehicles will not be enough to solve the problem. In British Columbia, the fleet of private cars turns over very slowly, and the pollution control devices required on most models frequently do not meet current emission standards.

Outside our cities and towns, the main causes of air pollution are smoke (from slash burning, teepee burners and household woodburning stoves), dust consisting of particulates from industrial and agricultural activities (such as rock crushing, mining, mineral transportation and soil disturbance), industrial emissions (such as sulphur-bearing compounds from the oil-and-gas and pulp-and-paper industries) and methane (primarily from landfills).

Some areas of B.C. are especially prone to air pollution, owing to the physical geography, and the location of some industries. All pollutants can be carried by air currents and can cause ill effects far from their source. Those pollutants cause extensive damage. Foremost are human illness, degraded agricultural and forestry resources, and the reduction of our atmosphere's transparency, which creates aesthetic and safety problems.

Strategic Directions and Actions

The initiatives below focus on ensuring atmospheric quality for British Columbia:

- **Mandatory Vehicle Emission Testing for the Lower Mainland** — B.C. Environment will help the Ministry of the Solicitor General implement a motor vehicle inspection-and-maintenance program in the Lower Mainland to decrease emissions. The program, which will be mandatory, will start in 1992.

- **Limits on the Volatility of Gasoline** — The ministry will assist in the development of regulations, in 1992, to limit the volatility of gasoline. The regulations will supplement the voluntary steps being taken by industry. They will apply during the summer, especially in the Lower Mainland.

- **Implementation of the National NO_x and VOC Reductions** — The ministry will implement the control strategy for nitrogen oxides (NO_x) and volatile organic compounds (VOCs), in accordance with the management plan for those pollutants developed by the Canadian Council of Ministers of the Environment (CCME).

- **More and Better Monitoring** — The ministry will improve its ability to monitor emissions of toxic air pollutants and to measure the concentrations of those pollutants in the ambient air.

- **Clean Air Strategy for British Columbia** — B.C. Environment will prepare a discussion paper on developing a clean air strategy, for consultation with the public and key stakeholders. It will address all the major issues, such as stratospheric ozone depletion, global warming, acid rain and urban smog. The paper will also respond to the need for new kinds of air management methods, and the need to avoid duplication of effort by different levels of

government. It will be issued in fall 1991. (See Chapter 5, Section B for more details.)

- **Smoke Management Strategy** — The ministry will assist in implementing a smoke management strategy to greatly decrease the occurrence and amount of pollution from all sources by summer 1992. This strategy will form part of the Clean Air Strategy.

2. Acid Rain

Acid rain is caused by air pollutants, particularly sulphur dioxide (SO_2) and nitrogen oxides, which combine with water vapour to form sulphuric and nitric acids, and precipitate as rain, fog or snow. Also known as acid deposition, it poses a major environmental threat in the northern hemisphere, injuring plant leaves and stunting the growth of trees, crops and other vegetation. In freshwater, acid rain can damage aquatic ecosystems and kill fish. It can also gradually erode stone, metal and other surfaces.

Here in British Columbia, the acid rain problem has not reached the crisis proportions that have made headlines elsewhere in North America, but it is still a cause for concern.

Almost 800 B.C. lakes have been tested for acidity. Of those, only one has shown enough acidity to indicate a potential for damaging aquatic life, and that acidity is due to natural causes. However, detectable effects of acid deposition are beginning to show up in some parts of B.C., notably the Lower Mainland. Large areas of the province, especially near the South Coast, are vulnerable because the soil and water have little buffering capacity to neutralize acids. Most of the Interior is not as sensitive because the rain and snow it receives are naturally less acidic, and the soil and water have a greater neutralizing capacity.

Industrial processes such as pulp mill operations and ore smelting are major contributors to SO_2 emissions, as is the burning of some fossil fuels for transportation and heating. Pulp mills create about 80 percent of the manmade SO_2 emissions on Vancouver Island.

In the Lower Mainland, about 70 percent of those discharges is from industrial sources and 20 percent from motor vehicles. The remainder comes from other area

sources. Sulphur dioxide emissions on the southern mainland coast will be substantially reduced by the end of 1991, when seven of the nine pulp mills there begin using natural gas as fuel — instead of sulphur-bearing fuel oils.

As an air-borne pollutant, acid rain can have external origins, too. Because of prevailing winds, the South Coast may be affected by emissions from Washington State, though more information is needed to determine the extent of that impact.

Acid rain could be costly to both our environment and our economy. Fish, forests and crops are valuable resources. And once an area is damaged by acid rain, there is no easy way to bring it back to normal. We must detect potential problems and then prevent them.

Strategic Directions and Actions

B.C. Environment is carrying out or considering these programs and policies to address the problem of acid rain:

- **Acid Rain Reduction Plan** — In concert with Washington State, the ministry will implement an acid rain reduction plan. Assessment and control efforts carried out under the plan will continue to focus on SO_2 emissions in coastal areas.

- **Acid Rain Criteria Network** — The ministry will modernize and expand the precipitation chemistry monitoring network to determine the distribution of acid rain. The monitoring network will pinpoint areas subject to excessive acid loading and help identify the sources responsible. The revamped network is to be operational by 1993.

- **Critical Loading Assessment** — The ministry will establish ambient levels of SO_2 that will trigger acidification of coastal ecosystems.

  B.C. Environment will work with the federal government and Washington State on this initiative.

3. Global Warming

The ramifications of global warming and climate change are so serious, in terms of the impact on the planet's ecosystem, as to dwarf virtually all other environmental problems. Although there is still debate within the scientific community on the magnitude or speed of the warming trend, we must take action now.

It is clear that concentrations of carbon dioxide and several other trace gases are increasing at a substantial rate in the atmosphere. Those so-called "greenhouse gases" enshroud the earth and prevent solar radiation from escaping naturally. The resulting "greenhouse effect" is likely to produce a significantly warmer global climate, with critical consequences.

The main contributor to greenhouse gases is the burning of fossil fuels, which greatly augments the amount of carbon dioxide released into the atmosphere. Other gases are involved, including certain kinds of chlorofluorocarbons (CFCs), methane, nitrous oxide and ozone. The destruction of much forest land has added to the problem because trees absorb carbon dioxide.

Even if the discharge of greenhouse gases were to completely stop today, global temperatures would continue to rise throughout most of the next century. And even the lowest estimated temperature change of 1.5 degrees Celsius would produce a warmer climate than any in recent history. For British Columbia, that could have a very considerable impact.

Strategic Directions and Actions

B.C. Environment is developing the following initiatives to confront the threat of global warming and the buildup of greenhouse gases:

- **Inventory and Control Strategies** — By the end of 1991, the ministry will complete a comprehensive inventory of all greenhouse gases and outline control strategies for public comment.

- **National Strategy on Greenhouse Gases** — The ministry will participate with the federal government and other jurisdictions in developing a national strategy for controlling greenhouse gases.

4. Stratospheric Ozone Depletion

Ozone-destroying substances are extensively used in all industrialized societies. CFCs are used as coolants in refrigerators and air conditioners, as well as in industrial solvents, soft-foam padding (such as cushions and mattresses), hard-foam packaging (such as fast-food containers and egg cartons), foam insulation and some aerosols.

The reliance on those compounds in refrigeration, air conditioning and a number of industrial applications requires that they be phased out carefully, until there are viable alternatives. Industry has been developing less destructive options to dramatically reduce the production and future emission of CFCs and halons. Meanwhile, the focus will be on eliminating use in the areas where alternatives already exist.

British Columbia fully supports Canada's ratification of the international agreement (*Montreal Protocol on Substances that Deplete the Ozone Layer*) to eliminate the production and use of CFCs, halons and related compounds by the end of the decade. Canada has chosen to speed up that schedule, setting its deadline for complete phase-out at 1997. B.C. Environment will also promote the responsible use and recapture of CFCs and similar compounds in existing products, to limit their release into the atmosphere.

Given the global seriousness of ozone-layer depletion, a successful solution requires concerted and coordinated efforts, both nationally and internationally.

Strategic Directions and Actions

B.C. Environment is undertaking the actions below to address the problem of stratospheric ozone depletion:

- **Regulations on the Use of CFCs and Halons** — The ministry will introduce regulations to limit the use of CFCs and halons in British Columbia. The regulations are to be promulgated by 1992.

- **Recapture of CFCs from Equipment and Appliances** — The ministry will require that equipment and appliances containing CFCs be maintained so that CFCs are not vented into the atmosphere.

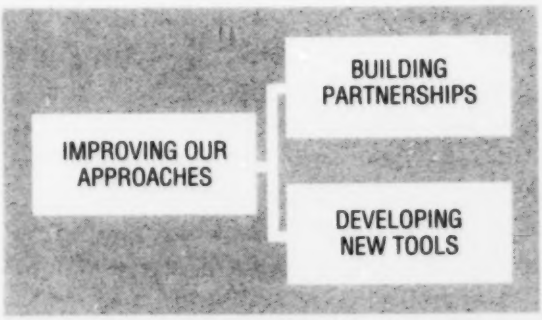
- **Recycling and Destruction of Ozone-Destroying Compounds** — The ministry will require industry to implement a program to recover, recycle and destroy CFCs and halons from various sources.

- **Ban on Sale of Some Products Containing CFCs** — The ministry will prohibit the sale of CFC-containing air horns and similar devices, and the sale of one-time air conditioner rechargers.

4
Improving Our Approaches

To protect our environment and sustain our economy, we must work together. We must recognize that we all bear some responsibility for our environmental problems and we must take collective responsibility for finding the solutions. Resolving multifaceted environmental problems requires cooperation and concerted action at many levels. We have neither the time — nor should we have the patience — for jurisdictional squabbling between governments or turf wars between interest groups, which impede necessary action. The public expectation is clear: we must get together and then get on with what needs to be done.

We must also consider the effectiveness of our legislation and enforcement. Outmoded statutes can impede progress just as much as thoughtful, modern legislation can encourage it. Our environmental laws must be reviewed to promote sound environmental stewardship.



The strength with which laws are enforced demonstrates the relative effectiveness of government legislation and the degree of our commitment to the legislation's goals. Rigorous enforcement of environmental standards and regulations will indicate our resolve to preserve and enrich the natural world.

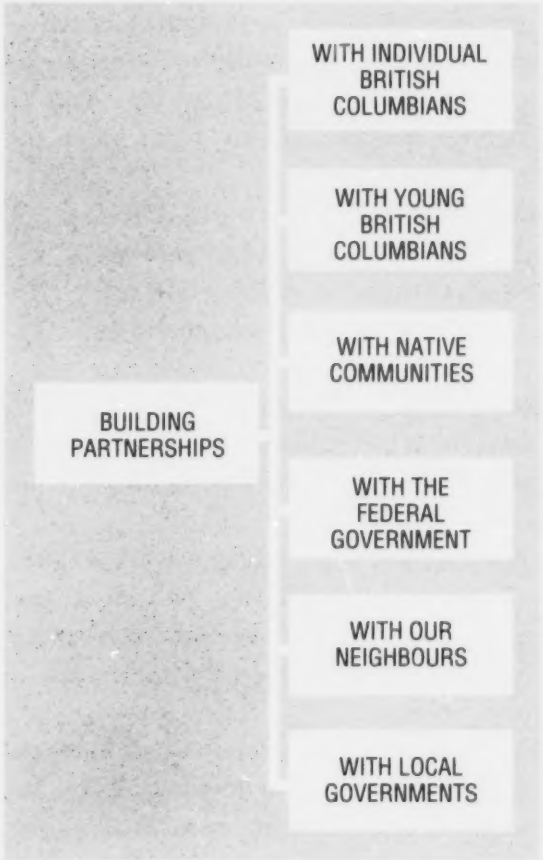
As a ministry, we are committed to renewing and strengthening partnerships. We are also committed to developing new laws and enforcement measures, as well as reinforcing the existing ones. Besides discussing those commitments, this chapter will examine other tools that B.C. Environment will use to ensure a sustainable environment: science and technology, economic incentives and emergency preparedness.

A. Building Partnerships

"Individually and collectively, we must make choices that reflect the true value of our scarce, unique and fragile environmental resources."

—Canada's Green Plan, 1990

The provincial government is committed to strong leadership in attaining a sustainable environment and economy for British Columbia. But the success of that initiative depends on the support and teamwork of the many groups in our society. Equally essential is close cooperation between the province and other political jurisdictions — including local governments, the federal government, and neighbouring provinces, territories and states.



1. With Individual British Columbians

Recent surveys indicate that, among Canadians, British Columbians have the most concern about their environment and the strongest belief that individuals can bring about positive change. In our province, the public is no longer prepared to sit on the sidelines.

With the growing complexity of environmental subjects, the public is demanding better and more accessible information. As well, people are frequently frustrated by the complex array of governments, ministries and agencies. They often lack confidence, moreover, that their opinions about a specific environmental issue will be seriously considered and acted upon. The recent increase in public documents on the environment and the publication of lists of information on polluters has been a positive step, but more needs to be done.

Strategic Directions and Actions

The following programs and policies are now being undertaken or considered to promote partnerships with individual British Columbians:

- **State-of-the-Environment Reporting** — As part of its legislative review, the ministry will consider requiring the production and dissemination of a Report on the State of the Environment.

- **An Environmental Information Registry** — The ministry will consider developing, in consultation with other ministries, a system of environmental information registries, perhaps in cooperation with B.C.'s public library system.

- **More Lists and Publications** — To ensure the public is better informed, the ministry will issue more publications on sensitive and difficult environmental matters, as well as lists of polluters.

2. With Young British Columbians

No group has expressed more concern about the environmental stresses we are now confronting than young British Columbians. They are the ones who will inherit the environmental results — both good and bad — of the decisions we make today. Such decisions are often difficult: we have to reconcile the protection and restoration of our environmental heritage with economic development.

As new generations grow, they must learn new attitudes to the environment and acquire an appreciation of its great value. Our children, after all, will soon become the guardians of this beautiful world. They need knowledge and wisdom to carry out their role responsibly. In many cases, the younger generations will teach the older ones, who were schooled in less environmentally aware times.

British Columbia will require an appropriately educated work force to support the developing environmental industries. And because new technology will provide some solutions to environmental problems, the province will need talented experts to pursue related research-and-development.

It is also crucial that opportunities be provided for our youth to take part in activities related to environmental preservation. That will allow them to experience first-hand the fragility of our environment and to contribute to its enhancement or reparation.

Strategic Directions and Actions

B.C. Environment will carry out the following initiatives to promote stronger partnerships with young British Columbians:

- **More Attention to Environmental Education in Our Schools** — The ministry will assist the Ministry of Education to encourage the development of greater awareness and understanding of environmental issues.

- **Promotion of Project WILD** — The ministry will continue to expand Project WILD to reach more children and strengthen the regional activities of the program.

- **Continue Development of the Environment Youth Corps** — The Environment Youth Corps (EYC) has been very successful in performing important environmental services. At the same time, it has given our young people invaluable "hands-on" experience in protecting and enhancing the environment. The ministry is extending the kinds of projects that can be undertaken by the EYC and the number of participants that can be accepted.

- **Environmental Information Centres** — The ministry will help the Ministry of Education encourage schools, colleges, institutes and universities to be community resources for environmental information.

3. With Native Communities

Native people are frequently the first to experience the environmental damage caused by modern society. Many Native people work in resource-based activities such as trapping, fishing and forestry, and many communities rely on fish and wild game for their food. Hence, the future health and sustainability of those resources are of particular importance to them.

Native people may be right in asserting that modern society's emphasis on developing and exploiting our natural resources has created many of our environmental

problems. However, the fact remains that all British Columbians share the responsibility for correcting the problems if we want the future to improve on the past. The Native perspective on the rich interrelationship of humanity and the environment will be an important asset as we search for new approaches and solutions.

Our government has recently modified its policy on Native land claims. It will soon begin formal negotiations with Native groups and the Government of Canada to create equitable settlements to long-standing Native grievances.

Resolving land claims will take some years. In the meantime, consultative links between government and Native resource users must be improved. Cooperative processes must also be developed to accommodate the affirmed aboriginal priority for resource harvesting, while still protecting the interests of all British Columbians.

Strategic Directions and Actions

To strengthen partnerships with Native people, B.C. Environment will focus on the initiatives below:

- **Native Concerns to be Addressed in Environmental Impact Assessments** — The ministry will ensure that environmental impact assessments of major resource development projects include evaluations of the impacts on Native food supplies and on traditional uses of wildlife.

- **Cooperative Management of Fisheries and Wildlife** — The ministry will provide opportunities, through cooperative management agreements, to address the changing role of Native communities in managing local fish-and-wildlife resources.

- **Native Involvement in Emergency Response Planning** — The ministry will seek greater involvement of Native people in emergency response planning, especially in coastal areas where Native people have an intimate knowledge of local conditions and rely on the vitality of local food resources.

4. With the Federal Government

Canadians need not be reminded that we live in a federal state in which both levels of government have significant and, at times, overlapping roles and responsibilities.

That is certainly the case when it comes to the complex issues involving environmental protection. We need to recognize and deal with that joint federal-provincial dimension when we make environmental decisions.

Governmental complexity, the rate at which environmental issues have arisen and the urgent need for action have resulted in some unnecessary duplication of effort — and sometimes friction. We Canadians tend to dwell more on our difficulties than on our successes, unfortunately. While we need to work to overcome the remaining jurisdictional impediments and concerns, we can be proud of our solid record of federal-provincial cooperation on environmental subjects.

As a ministry, we will continue to work with our federal counterparts in every sector. We recognize and respect the essential role of the federal government in dealing — at a national and international level — with environmental questions under its jurisdiction. We also recognize the need for interjurisdictional collaboration to safeguard the environment.

Strategic Directions and Actions

The following programs and policies are now being undertaken or considered to augment the partnership between the province and the federal government:

- **Agreements with the Federal Government** — On behalf of the Province of British Columbia, the ministry will negotiate an agreement on environmental protection and enhancement with the federal government.

- **Integration of Activities** — The ministry will develop operational agreements to reduce overlap and duplication with federal responsibilities.

- **Support for the CCME** — The ministry has significantly increased its financial support of the Canadian Council of Ministers of the Environment (CCME) to allow that important organization to develop national policies, agreements and protocols.

- **Intergovernmental Cooperation** — The ministry will implement the Statement of Principles of Interjurisdiction agreed to by all provinces, territories and the federal government at the meeting of the CCME held in conjunction with Globe '90, in March 1990. That statement provides a blueprint for

efficacious federal-provincial and interprovincial teamwork on environmental matters.

- **National Standard Setting** — The ministry will continue to fully participate in national and international activities that establish national standards and strategies, in subjects such as contaminated sites, greenhouse gases, and PCB storage and destruction.

5. With Our Neighbours

We must build new partnerships with neighbouring jurisdictions. The environment is now a global concern and cannot be handled unilaterally on a state-by-state, province-by-province basis. Rivers and wind do not respect political boundaries. Neither do air and water pollutants. It follows that policies and activities in one area can have profound, and sometimes disastrous, impacts on the environment of another.

Nothing illustrates that better than the recent discovery of concentrations of heavy metals in some arctic areas, as a result of air-borne pollutants from industrial activity in the south. Closer to home, the Exxon Valdez oil spill in Alaska (March 1989) reminded British Columbians that our own marine environment is vulnerable to similar disasters caused by international shipping off our coasts.

Broad-based international efforts to preserve the environment are essential. So is the need for neighbouring jurisdictions to erase any jurisdictional impediments to ecological protection. Of particular importance to British Columbia is the relationship we have with the State of Washington in managing and protecting the environment we share and enjoy.

Intergovernmental teamwork will also bypass unnecessary complications created when different provinces adopt different approaches to the same problems. That is particularly the case in regulating industry, whose activities are becoming increasingly global in scope.

When we confront issues with regional implications and markets we should move hand in hand to reach regional solutions. Just as we have been working with other jurisdictions to create uniform commercial laws and regulations, we now need to standardize our environmental rules so that commercial transactions will not be needlessly complicated.

Strategic Directions and Actions

To promote partnerships with our neighbours, B.C. Environment will work to carry out the activities below:

- **Environmental Protection Agreements** — The ministry will take the lead in negotiating environmental protection agreements with our Canadian neighbours — Alberta, the Northwest Territories and the Yukon Territory — and environmental compacts with Alaska, Washington, Idaho and Montana.

- **Western Canadian Cooperation** — The ministry will work with the western provinces and the territories to adopt common approaches to managing hazardous waste, developing markets for recycled goods and other matters of shared interest.

- **Working with Washington State** — The ministry will take steps to ensure better cooperation and coordination with Washington State on environmental matters.

6. With Local Governments

Just as we will seek to take on more responsibility for environmental management from the federal government, we will also explore providing more responsibility to local government, which is more directly in touch with changing public needs.

Local governments have already assumed a greater role in environmental protection — through waste management planning, reductions in municipal solid waste and the Greater Vancouver Regional District's role in air quality management in the Lower Mainland. We see that trend increasing over the decade, with more functions being transferred to local government, together with the resources and expertise required to assume those roles.

Strategic Directions and Actions

The following policies are now being considered to strengthen the partnership between the province and local governments:

- **Legislative Review** — The ministry will be identifying functions that could

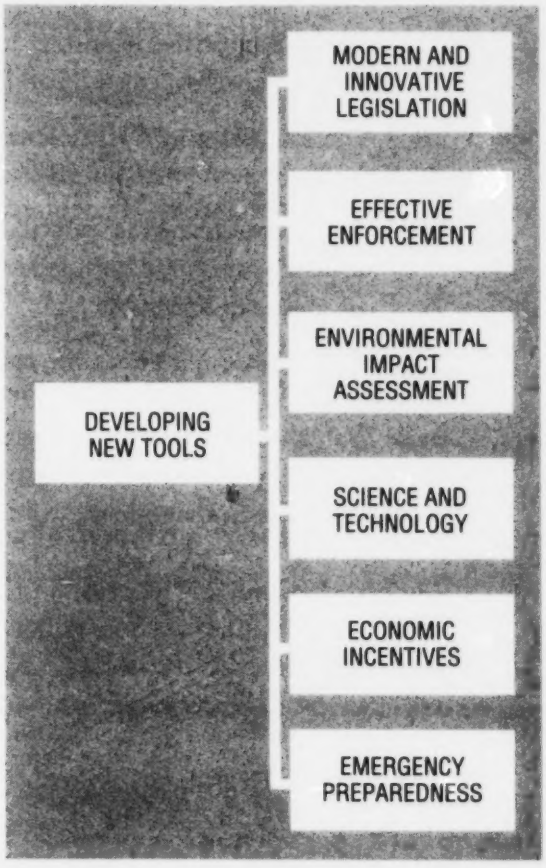
be devolved to local government in the areas of environmental protection and water management, as part of its comprehensive review of legislation.

- **Agreements with Local Governments** — In consultation with the Ministry of Municipal Affairs, Recreation and Culture, the ministry will enter into agreements with local governments to transfer responsibilities and specific environmental management activities.

B. Developing New Tools

1. Modern and Innovative Legislation

Many of our provincial laws are old and do not reflect modern notions of environmental management. The powers of enforcement and regulation are spread over a large number of acts and regulations. Those are problems that must be corrected to forge a body of laws that rigorously support ecological preservation.



Given the attention that is now being directed at environmental concerns, it is worth recalling that only in the last few years has "environmental protection" emerged as a focus for ministry activity and, consequently, legislation. The early 1970s saw a proliferation of new environmental laws across North America. As the public became more and more aware of the nature of ecological problems, and of the ramifications for the present and the future, it began to demand more stringent standards and more ministry action.

In Canada, most "ministries of environment" were established in the last 10 years.

All have had their mandates and responsibilities significantly augmented in the last two years. The same pressures leading to those changes now demand the re-examination and revision of our own legislation to ensure maintenance of ecological systems and the compatibility of all resource and land uses.

Strategic Directions and Actions

To strengthen and modernize our legislation, B.C. Environment is committed to these initiatives:

- **Draft Environmental Protection Legislation** — The ministry will prepare draft legislation covering the key aspects of environmental protection, many of which are mentioned in *Environment 2001*. Among other matters, the draft legislation will include the following:
  - — Definition of the mandate and role of B.C. Environment, and the powers and responsibilities of the minister.
  - — Consolidation of all provisions dealing with the protection of air, soil and water.
  - — Provisions fostering public involvement in all aspects of environmental preservation and ensuring that environmental information is available to the public.
  - — Provisions facilitating the resolution of environmental disputes.

- **Draft Water Resources Legislation** — The ministry will draft a new Water Management Act to undertake a more comprehensive and integrated approach to water management.

- **Review of Wildlife, Fisheries and Recreation Legislation** — The ministry will review, update and consolidate all legislation covering wildlife and freshwater fisheries. Protecting sensitive habitats and endangered species will be of particular concern.

- **Document on Draft Legislation** — In late fall, the ministry will issue *Renewal and Reform: Draft Legislation to Protect and Enhance B.C.'s Environment*. The paper will lay out a clear, long-term program of legislative renewal for the ministry. (This document is described in more depth in Chapter 5, Section B.)

2. Effective Enforcement

Clear, comprehensive legislation and regulations are fundamentally important, but they are only words until they are put in to effect. Making legislation work requires information, education and, finally, rigorous enforcement.

The time has come to review our enforcement measures so that the provincial government can respond effectively to mounting pressures on our natural resources. The re-examination encompasses the need for better enforcement, stronger fines and more universal compliance with our legislation.

Several initiatives have recently been taken to toughen enforcement. For example, goals have been established to give clear direction to our environmental strategy. Statutory amendments with increased fines have been adopted. Those include fines of up to $3 million daily for violations of the Waste Management Act. Similarly, the rate of both charges and prosecutions has risen.

The enforcement staff organization has been restructured, and identifiable Environmental Enforcement Units have been established in each of the six provincial regions. There has been an increase in associated staffing resources. In addition, new procedures and guidelines have been introduced to implement enforcement policy consistently and efficiently.

Strategic Directions and Actions

The actions below describe what B.C. Environment is already doing or will consider for the future to ensure effective enforcement:

- **Better Enforcement Provisions** — As part of the overall review of environmental legislation, the ministry will consider measures to strengthen enforcement provisions. Those measures are reviewed at length in the companion document, *Ensuring Effective Enforcement*, and will include:
    - — Complementing the current ticket system with a system of administrative penalties.
    - — Reviewing and broadening enforcement measures that make directors personally liable for environmental offences committed by their company.

— Enlarging the circumstances in which members of the public can initiate environmental investigations. That is to include provisions which ensure increased public scrutiny of enforcement activities.

- **Stronger Environmental Enforcement** — The ministry will continue to take strong enforcement and compliance measures to protect the environment. That will include fewer warnings and warning tickets, and proceeding with charges more readily. As well, the ministry will publicly release statistics on enforcement activities (number of charges laid, number of convictions, number of inspections, etc.) and lists of violators, on a regular basis.

- **Publishing of Enforcement Procedures** — The ministry will release *Ensuring Effective Enforcement* concurrently with *Environment 2001* to outline the enforcement policies and procedures, for comment and consultation. (More information on this paper is provided in Chapter 5, Section B.)

3. Environmental Impact Assessment

One of the keys to sustaining a healthy natural world is a reliable system of environmental impact assessment (EIA). If economic development is to occur without degrading our environment, we need to properly assess how each project will affect the environment and wildlife. We must also consider the socio-economic impact on surrounding communities, not to mention the effect on other resource values such as recreation and heritage. With sound assessment and the full involvement of the affected parties, we can, as a province, decide if the development should proceed and, if so, under what terms and conditions.

Environmental impact assessment is not new to British Columbia. For some time, the province has taken an integrated approach to assessing impacts, carrying out well-developed procedures in several sectors. As an example, legislation is already in place to review all major energy projects and mining developments, and a new procedure is being used to assess all other major projects. Independent public reviews of specific projects have been undertaken prior to cabinet approval.

Even though environmental assessment procedures are operating in many spheres, the overall EIA system must be improved and rationalized. There are three main areas of concern. The first is the need to clarify jurisdictional responsibility. Although both the provincial and federal governments are involved in environmental

assessment, recent court decisions and federal legislative initiatives have created confusion about the validity of the assessment processes and the respective roles of each government. The draft federal Environmental Assessment Act introduces new factors and concepts which must be taken into account.

A second problem has to do with the methodology involved in EIAs. We have tended to concentrate too much on concrete technical issues and have not addressed broader environmental and socio-economic concerns. That is especially true for intangibles such as the appreciative use of resources for their scenic and cultural values. Assessment processes should evaluate and weigh those factors, as well.

A third concern is that past environmental assessments have been too site-specific. In other words, they have focused on the effects of one certain project, in one place and one timeframe. Though the approval being sought is for a specific site, it must be evaluated in a framework that accounts for the full and accumulative range of impacts on an ecosystem.

Strategic Directions and Actions

The following programs and policies are now being undertaken or considered in the area of environmental impact assessment:

- **Comprehensive Review of Environmental Impact Assessment** — B.C. Environment will review all legislation and procedures on environmental impact assessment to ensure compatibility and an integrated approach. That will be done in cooperation with other government ministries directly affected by EIA. The review will build on the systems already developed and will consider the extent to which environmental impact assessment in the province should be:
    - — Managed as one integrated assessment system or as a number of carefully coordinated separate systems.
    - — Integrated, to consider environmental, economic and social factors.
    - — Accessible to the public.
    - — Based on clear guidelines defining the scope and nature of the review.
    - — Providing for independent public review.

— Providing definite timeframes for each step of the process to guarantee certainty and predictability.

— Compatible with similar processes in other jurisdictions, including provisions for joint processes.

— Accountable and responsive to the stakeholders and the public.

— Respectful of existing decision-making processes of other ministries, Crown agencies and orders of government.

- **Interjurisdictional Agreements on EIA** — The ministry will take the lead in negotiating agreements on environmental impact assessment with neighbouring jurisdictions and the federal government to establish clear assessment procedures when joint interests must be addressed.

- **Discussion Paper on EIA** — The ministry will release *The Environmental Impact Assessment Process in British Columbia: New Approaches*. The paper will be released following consultation with other provincial agencies and will outline future EIA options for British Columbia. (Chapter 5, Section B.)

4. Science and Technology

Finding solutions to environmental problems will require the application of the best environmental science and most modern technology. As a society, we must have the technical and scientific skills necessary to properly monitor, protect and rehabilitate the environment. The development of those skills will require support for all our institutes of higher learning and research, to foster a critical nucleus of researchers capable of tackling environmental problems. Since many ecological issues have social implications, we also need to study new decision-making processes and ways of settling disputes. Money generated by the Sustainable Environment Fund is already being used to support many important research initiatives.

Due to the nature of our resource-based economy, British Columbians have become world leaders in many areas of environmental research and technological development. Our scientists are renowned for their expertise in earth and ocean sciences. Moreover, our development of computer and communications technology to resolve environmental problems is in demand around the world. Businesses dedi-

cated to cleaning up the environment have become an important part of our economy and are marketing their expertise across the world.

Equally essential to environmental solutions are sources of reliable, objective and credible information to help us reconcile the needs of ongoing development with environmental protection. Those needs will be partially filled through the regular production of environmental information by government ministries. But more independent evaluation and sources of knowledge are required, as well.

Strategic Directions and Actions

The following programs and policies are now being undertaken or considered to encourage the development of scientific research and the application of the best environmental technology in British Columbia:

- **Funding for Environmental Research** — Money from the Sustainable Environment Fund and the Science and Technology Fund will continue to be allocated to environmental research initiatives in both the natural and social sciences.

- **Sustainable Development Foundation for British Columbia** — As recommended by the B.C. Round Table on the Environment and the Economy, the ministry will encourage the creation and funding of a foundation to conduct research and studies on sustainable development.

- **Environmental Industries Strategy** — B.C. Environment will work with other ministries, the private sector and the scientific community to develop an environmental industries strategy for British Columbia. The strategy will encourage a strong and vital base of technologically advanced environmental businesses.

5. Economic Incentives

Economic incentives harness the power of the marketplace to encourage sound environmental behaviour. Government can use them as a helpful complement to environmental regulation. Basically, economic incentives stimulate environmentally friendly activities by making them less expensive than the more damaging activities. They are an appeal to our pocketbook, as well as to our head and heart.

If we are going to establish a regime of economic incentives, we need to bear in mind several considerations:

- The determination of costs and benefits of any development or activity should include the full social and environmental implications.
- Fees, taxes, pre-disposition charges and other revenues aimed at solving environmental problems must be seen to directly deal with the targeted problem.
- The costs and benefits of environmental programs need to be carefully considered and monitored.

Economic incentives can take many forms. Four of the most common are described below.

Emission charges are meant to encourage the reduction of industrial effluent by making it cost-effective for industries to do so. The lower the discharge, the lower the charge to the industry. In other words, it makes good economic sense to not only meet regulatory standards, but to attain even lower discharge levels — and that benefits the environment. Emission charges have been applied quite effectively in the case of closed-system discharges. Unfortunately, they have not been as successful in cases where industries release their waste right into the environment.

Tradeable permits are meant to guarantee that permit holders do not exceed a certain level of discharge — but at the lowest financial cost to them, by allowing them to trade permits. In many cases, the system can save permit holders a significant amount of money. The problem is, though, that the conditions necessary for trading to succeed are quite demanding. Permit-trading systems must be carefully designed in order to realize cost savings.

Deposit/refund systems have functioned well in areas such as litter control. They are relatively inexpensive and can be implemented, evaluated and adjusted with relatively little risk. Their extension to deal with special "problem" commodities and to complement recycling programs has generally been successful.

Other fee-based systems generally aim to discourage industries from creating "problem" waste or by-products. They also encourage reprocessing and input-and-output substitution. Systems may range from charges and direct taxes, to tax

differentiation. Some strong incentive-based systems of this type have been effective in controlling hazardous waste in Europe.

Strategic Directions and Actions

B.C. Environment is seriously considering expanding its use of economic incentives, as the activities below describe:

- **Greater Use of Economic Incentives** — In conjunction with the Ministry of Finance and Corporate Relations, B.C. Environment will continue to develop economic incentives and programs to encourage environmentally sound behaviour and complement regulation.

  Incentives have been used with good effect in developing recycling initiatives, in encouraging sectors to effectively handle their own waste, and in promoting new approaches and technologies to deal with environmental concerns. The approach will be expanded and applied to other areas. A number of deposits and incentives in the waste management sphere are already being examined.

- **Enhancement of the Sustainable Environment Fund** — The ministry will work to expand the use of the Sustainable Environment Fund, which will continue to be an important fiscal tool for promoting environmentally responsible behaviour. More revenue sources will be identified and applied to deal with particular ecological problems.

6. Emergency Preparedness

Quick and effective emergency response plays an essential role in a good environmental protection system. We must, of course, do all we can to prevent or avoid environmental accidents and disasters, whether they be caused by people or nature. But no amount of preparation can avert every emergency.

When a spill or flood takes place, we must be able to respond efficiently to protect human lives, property and the natural world. And that requires a thorough, well-established regime of emergency response. In the last two years, the provincial government has made great strides in improving its emergency preparedness — through its own actions and by coordinating the efforts of others.

Strategic Directions and Actions

The following programs and policies are now being implemented or considered to improve our level of emergency preparedness:

- **Oil Spill Protection** — The ministry will improve emergency response to oil spills by:
  - — Identifying and making an inventory of the resources in the most accident-prone or environmentally sensitive coastal areas, and developing emergency response counter-measures.
  - — Requiring the petroleum industry to prepare contingency plans for oil spills, undertake risk assessments and develop response capacities. Industry will be invited to participate in government emergency action and preparedness.
  - — Continuing to update and refine the B.C. Marine Oil Spill Response Plan, involving governments, industry and the public.

- **Better Flood Response** — The ministry will improve overall flood response capacity by:
  - — Obtaining federal support for the last five years of the Federal-Provincial Mapping Agreement.
  - — Completing floodplain mapping for the Lower Fraser Valley.
  - — Enhancing floodplain management by local governments.
  - — Developing a contingency plan outlining how provincial agencies will respond to major floods and dam failures.
  - — Increasing funding for flood protection measures.

- **Improved Toxic Spill Response** — The ministry will upgrade its ability to respond to toxic spills by:
  - — Updating the inventories of stockpiles of potentially dangerous materials in each community.
  - — Continuing to develop cooperative agreements and action plans with municipal/regional fire departments, the Radiation Protection Service, the Drug Information Centre, the Federal Ministry of National

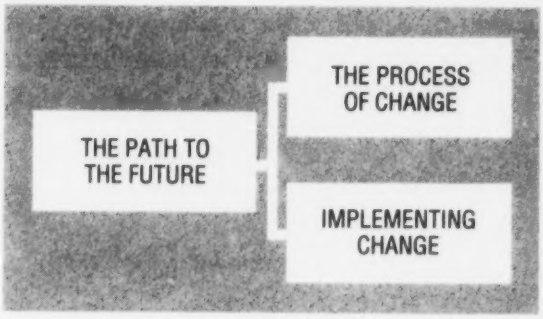
Defense, Environment Canada, the Transportation Emergency Assistance Plan, the Canadian Coast Guard and relevant private industries.

— Requiring industry to prepare spill contingency plans, undertake risk assessments and develop response capabilities.

5
THE PATH TO THE FUTURE

A. The Process of Change

Environment 2001 is intended to guide the ministry's efforts to ensure a sustainabie environment for our province. B.C. Environment is committed to using the principles and directions proposed in this document as a basis for discussion, for generating new ideas, and for action.



The environmental issues of this decade are varied and complex. The resolution of those issues will be greatly assisted by the discussion generated by the series of companion documents which are part of *Environment 2001*.

In the end, we must decide what kind of a province we want to leave to future generations. Are we resigned to passing on an unhealthy land, whose resources have been seriously despoiled? Or are we prepared to work together to assure a land of sparkling waters, fresh clean air, bountiful wildlife and a wealth of resources?

The path to realizing the vision of sustainable development is paved with strong commitments to action, and lined on either side by the power of partnership and wise environmental initiatives. *Environment 2001* is an important step along that path.

B. Implementing Change

Many of the actions or policies outlined in *Environment 2001* are now being carried out. Others require further examination and discussion. When changes to legislation are in order, we must develop legislative proposals and then take them through the rigour of the legislative process.

The companion documents mentioned above are at different stages of development. Some have been completed and are being released at the same time as *Environment 2001*. They are:

1. *Managing Wildlife to 2001: A Discussion Paper*
2. *Conserving Our Resource: Fisheries Program Strategic Plan, 1991-1995*
3. *Sustaining the Water Resource*
4. *Ensuring Effective Enforcement*
5. *New Directions in Pesticide Management*

Other documents, particularly those involving legislation or extensive consultations with other ministries and jurisdictions, will be released once those consultations have been completed. Those include:

6. *Clean Air Strategy for British Columbia*
7. *New Directions in Environmental Protection*
8. *The Environmental Impact Assessment Process in British Columbia: New Approaches*
9. *Renewal and Reform: Draft Legislation to Protect and Enhance B.C.'s Environment.*

All the papers are consistent with the overall direction set out in *Environment 2001*. The consultation and comments received on them will allow for the ongoing development and refinement of B.C. Environment's programs and priorities.

The following pages set out a brief summary of each discussion paper. You can obtain copies of the companion documents from the ministry's Public Affairs and Communications Branch or from the specific ministry program responsible for each one.

1. *Managing Wildlife to 2001: A Discussion Paper*

Managing Wildlife to 2001 develops in more detail the policies and procedures needed to meet the commitments in *Environment 2001*, and is to be released at the same time. This discussion paper confronts the issues facing wildlife and proposes management initiatives to ensure a healthy, diverse and sustainable resource. Under this

umbrella document, the Wildlife Program will release other key planning products, including regional wildlife plans, provincial species statements and a land management strategy.

Managing Wildlife to 2001 has the following objectives:

- Inform the public, other resource agencies and industries about the status and value of the wildlife resource, as well as the problems it will face in the years to come.
- Provide an opportunity for comment on the overall direction of wildlife management.
- Prepare a strategy for managing wildlife to the year 2001.

The overall goal proposed for the Wildlife Program is to "manage the province's wildlife resources for the benefit and enjoyment of British Columbians, by maintaining an optimum balance between ecological, cultural, economic and recreational needs."

To meet that goal, the program has defined five "working goals" which are then expressed in six "challenges," listed here:

- Manage wildlife for diversity and sustainability.
- Manage wildlife to meet public demands — appreciative use, hunting, guiding and trapping.
- Manage wildlife to protect people and property.
- Educate and inform the public.
- Share responsibility for wildlife management.
- Manage the organization (the Wildlife Program).

The challenges are expanded into the many specific activities that the Wildlife Program must carry out to fulfill its commitment to wildlife in this decade. B.C. Environment is committed to addressing the difficult environmental challenges of the 1990s in a framework of consultation and partnership, not only within government, but also with the public and key stakeholders in the resource.

2. *Conserving Our Resource: Fisheries Program Strategic Plan, 1991-1995*

The fisheries of British Columbia are a vital component of our environment, providing sport fishing for residents and tourists alike, and food fishing for Native peoples. However, overfishing and habitat destruction are endangering that valuable resource. The importance of preserving our fisheries is a central theme in *Environment 2001* — and it is elaborated upon in detail in *Conserving Our Resource.* As the Fisheries Program's strategic plan until 1995, the paper sets out specific goals and activities to help ensure prudent resource management, conservation and allocation. The plan is now available to the public for information and comment.

The main focus of *Conserving Our Resource* is on the freshwater fisheries, where most of British Columbia's management responsibility lies. The strategy is seen as a "living document." It will be reviewed and revised regularly, based on public feedback and on changing resource issues and priorities.

The strategic plan begins by stating the goal of the Fisheries Program, which is to "manage fish, fish habitat and sport fishing for the people of British Columbia." After laying out the management principles that guide the Fisheries Program, the paper defines its "strategic objectives," listed below:

- Conserve wild fish stocks.
- Protect and manage fish habitat.
- Serve the public interest.
- Practise strong corporate management.

Each strategic objective is accompanied by several "strategies" aimed at expressing the objective in concrete action. "Conserving wildlife fish stocks," for example, is to be carried out by implementing a coordinated approach to assessing and managing fish populations; preventing the overharvesting of wild stocks through conservative management; reducing the commercial interception of nontarget sport fish; and identifying and mitigating the effects of environmental changes on fish populations.

Attached to each strategy is a preliminary list of the activities which will be required. In future, a complete set of activities and an associated action plan will be developed to fully implement each strategy. The public will play a key role in determining both the general direction of the Fisheries Program and specific program activities.

3. *Sustaining the Water Resource*

Sustaining the Water Resource expands upon the water management policies and actions outlined in *Environment 2001*, and is being issued at the same time. Following consultation on this paper, a new Water Resources Management Act will be drafted. The paper deals with the key areas of water quality and allocation, as well as the relationship of water management to other environmental resources. It defines the new policies and strategies required to manage our water resources on a sustainable-use basis, focusing on these issues:

- Water export.
- Protection of groundwater.
- Water management, planning and instream uses.
- Protection of water quality.
- Water pricing and conservation.
- Monitoring and research on the water resource.

The future management of those issues will be based on the following principles:

- Sustainable use — water allocation must not exceed the resource's ability to replenish itself.
- Protecting ecological systems — water quality and aquatic ecosystems must be maintained and restored.
- Comprehensive planning — water management must be based on anticipating conflicts, not reacting to them.
- Integrated use — water allocation must be based on economic, social and environmental factors.
- Protecting health and well-being — safety must be a paramount consideration in managing water resources.
- Decision making at the appropriate level of government — to ensure fairness, expedition and responsiveness.
- User pay — water users must pay costs that reflect the more complex management of the resource.
- Public consultation — the public must have access to information and be a part of conflict resolution.

Water management will become one of the most significant environmental issues during the 1990s. Comprehensive new policies and legislation will be required to adequately address public needs and aspirations. A major workshop to review those proposed policies will be held later this year, providing for in-depth discussion with a range of key stakeholders.

4. *Ensuring Effective Enforcement*

Ensuring Effective Enforcement is an outline of the policies and procedures B.C. Environment uses to carry out its enforcement and compliance program. The paper, which is being released at the same time as *Environment 2001*, describes the guiding principles of the program. Those include a commitment to respond to every violation and to encourage public involvement in the process. Recent changes in policy and legislation have resulted in restructured staffing, the public release of polluter lists, increased penalties, more prosecutions and the forfeiture of profits derived from illegal activities.

The wide range of legislation enforced by B.C. Environment includes such areas as fish, wildlife and recreational area protection, as well as the regulation of waste, water and pesticides. The role of government officials in carrying out their duties under the legislation is provided, as well as a description of when, why and how inspections and investigations are undertaken.

When violations are uncovered, a number of criteria are reviewed to determine what the appropriate response should be. In the most serious cases, formal prosecution will be pursued in which both fines and jail sentences can be ordered.

B.C. Environment is considering a number of innovations to enhance the current enforcement program and, in particular, to apply the "polluter pay" principle. Some of the proposals are: a scheme to increase the use of administrative penalties, wider provisions regarding liability for officers and directors of corporations, a review of penalties, and the addition of new, effective court orders. Provisions for alternate dispute resolution and mandatory environmental audits are also being contemplated.

This paper is a unique effort among provincial jurisdictions in Canada to inform the public about the enforcement process.

5. *New Directions in Pesticide Management*

New Directions in Pesticide Management is to be released concurrently with *Environment 2001*. Its main emphasis is a shift to integrated pest management, in order to substantially reduce the amount of chemical pesticides being used in the environment. The discussion paper outlines a coordinated strategy for integrated pest management involving other government ministries.

The new pesticide management strategy is based on the following four objectives:

- Protection — protecting ecosystems and public health from pesticide application.
- Education – providing users and the public with information on integrated pest management strategies, as well as the results of monitoring pesticides in food and the environment.
- Reduction — reducing chemical pesticide applications by at least 25 percent by the end of the decade.
- Participation — providing opportunities for public participation in key decisions concerning pest management activities.

New Directions in Pesticide Management proposes specific targets for achieving those objectives. In addition, it outlines new pesticide management legislation, which will be incorporated into the proposed environmental protection act.

A key to greater public participation in pesticide management strategies will be the formation of the Pesticide Management Advisory Committee — with representatives from provincial and federal government ministries, industry and environmental groups. The committee will advise the Minister of Environment on policies, principles, regulations and guidelines on pesticide use. Chairpersons of legislative, technical, research and monitoring subcommittees will report regularly to the advisory committee.

6. *Clean Air Strategy for British Columbia*

Over the next year, the ministry will develop a clean air strategy for B.C. to put into effect the commitments set out in *Environment 2001*. That will be done in close consultation with local and regional governments, and a range of interested groups.

A discussion paper outlining the scope of the issues and alternative solutions will be issued this fall (1991).

British Columbia increasingly faces air quality issues that cannot be effectively managed by the traditional control methods. The issues of the 1990s are urban smog, ozone layer depletion, global warming, smoke from a variety of sources, and acid rain.

More and more, air quality management will rely on new approaches, as well as cooperation on the part of all three levels of government, the general public and industry. Those new approaches will include economic incentives, emission trading, and new priorities for transportation and energy management. British Columbia will develop its clean air strategy in cooperation with the overall initiative being undertaken by the CCME.

The Clean Air Strategy will address the following issues:

- Elimination of CFCs and related compounds (ozone depletion).
- National Action Strategy on Climate Change (greenhouse gases).
- NO_x/VOC management plan (urban smog).
- Control of SO_2 emissions (acid deposition).
- Smoke management (e.g. slash burning and teepee burners).
- Upgrading emission standards (control of toxic pollutants).

The strategy will lay out the options for addressing each air quality issue, set clear priorities for future air management, and define targets and cooperative approaches that will ensure environmental quality. In developing both short- and longer-term initiatives, the strategy will consider changes and improvements in many areas, including legislation, regulations, policies, strategic and operational plans, monitoring and assessment, and public information and consultation.

The threats to atmospheric quality are some of the planet's most severe environmental issues. British Columbia's Clean Air Strategy will address those problems and take strong steps to solve them.

7. *New Directions in Environmental Protection*

New Directions in Environmental Protection will be released in the fall of 1991. It will provide a basis for the comprehensive review of B.C. Environment's waste management control strategies and will lead to a new environmental protection act.

The key policies and principles to be included in the discussion paper are:

- Waste minimization — the emphasis will be on pollution prevention rather than pollution control. Priority will be given to the "four Rs" of waste management (reduction, reuse, recycling and recovery).
- Polluter pays — this principle can be used in a range of economic incentives targeted at both the waste generator and the consumer to encourage waste minimization strategies. The incentives will include discharge fees, emission trading, levies on environmentally harmful substances, deposits and tax adjustments.
- Partnerships in waste management — the emphasis here will be on reducing duplication and overlap with federal agencies, handing over some responsibilities to local levels of government, and requiring industry to assume responsibility for the entire life-cycle of their products.
- Integrated approaches to decision making — decisions will be founded on economic and social factors and take into account the effect of waste discharges on the whole ecosystem.

A detailed set of actions will be outlined in the discussion paper to reduce degradation of our atmosphere, water and soil.

8. *The Environmental Impact Assessment Process in British Columbia: New Approaches*

This document will consider the need for new legislation to improve current environmental impact assessment (EIA) procedures and discuss the available options. Proposals for new EIA laws will then be incorporated into the ministry's overall review of its legislation. The paper is being developed in close collaboration with other ministries because environmental assessment is a shared responsibility.

Environmental Impact Assessment in British Columbia: New Approaches will outline the principles and processes for undertaking environmental assessment in British Columbia. It will address the following issues:

- Whether B.C. should move towards a single integrated assessment system or continue with different sectoral processes.
- How to ensure the availability of information and public input at key points throughout the process.
- How to manage assessments when more than one jurisdiction is involved. That would include considering relations with the federal government and neighbouring jurisdictions.
- How to ensure ongoing compliance through monitoring and other mechanisms, and the extent to which those mechanisms should be built into the EIA system.
- What role local and regional governments should play when the impacts are largely local, and local approvals and permits are required.
- What part Native communities should play when the project being assessed directly affects resources in which they have particular interests.
- What the scope of the environmental assessment should be, in considering economic, social and cultural factors as well as environmental impacts.
- How to make the EIA process more responsive and timely.
- How to manage the independent review of major projects.
- How to ensure the ultimate accountability of the EIA process to government and the public.

9. *Renewal and Reform: Draft Legislation to Protect and Enhance B.C.'s Environment*

This document will integrate the many recommendations for legislative change into a coherent, long-term program of legislative renewal for B.C. Environment. To be released in late fall, *Renewal and Reform* will include draft legislation and recommendations on the number and content of new acts. The intent is to:

- Develop comprehensive and modern legislation.
- Ensure a solid legislative foundation for ministry activities.
- Introduce new concepts and approaches.
- Spell out environmental rights and obligations.

New legislation is required as the foundation for a renewed, strengthened ministry which places greater emphasis on environmental programs. While there is universal concern about the state of the environment, there also exists widespread skepticism about the ability of an elaborate system of federal, provincial and local laws to adequately cope with present and future environmental problems.

Over the next few years, the resulting legislative program will ensure that all the current acts of B.C. Environment are reviewed, revised and amended, or incorporated into new legislation.